Panasonic

Operating Instructions

TV/VCR Combination

TC-W21

Please read these instructions before operating this set and retain them for future reference.

TQB620896-2

Dear Panasonic Customer

Welcome to the Panasonic family of Customers.

We hope that you will have many years of enjoyment from your new TV/VCR Combination.

To obtain the maximum from your new set, read these Instructions before making for any adjustments and retain them for future reference. Retain your purchase receipt also, and note down the Serial Number of your set in the space provided on the rear cover of these Instructions.

HQ (High Quality) Picture System

Video recorders carrying the HQ symbol mark feature the VHS High Quality Picture System. This system assures complete compatibility with VCRs that use the conventional VHS system.

Copyright

You may use pre-recorded TV broadcasts and musical programmes for your personal entertainment only. However, you are not permitted to utilize them for any other purpose without the consent of the copyright holder.

Connect the Aerial Cable to the RF in Terminal 6
Connect the Plug to the wall outlet 7
How to turn the Power On 7
First Switch on from NEW 7
Battery Installation 8
Battery precautions 8

Front Control Panel 10
How to open the Control Panel Cover 10
How to insert or eject a video cassette 11

Remote Control 12
Buttons located under the Remote Control's door 14
Controls and Terminals on the TV 16

How to connect: the Video and Audio Input Terminals 18
the Monitor Out Terminals 19
Reproducing a tape: using another VCR and recording to this VCR 20
using this VCR and recording to another VCR 20
Connecting microphones 21

Country System Selection 22
Automatic Search 24
Manual Search 26
Fine Tuning 28
How to Cancel the Fine Tuning Function 29
Programme Number Skip 30
How to Cancel the Skip Function 31

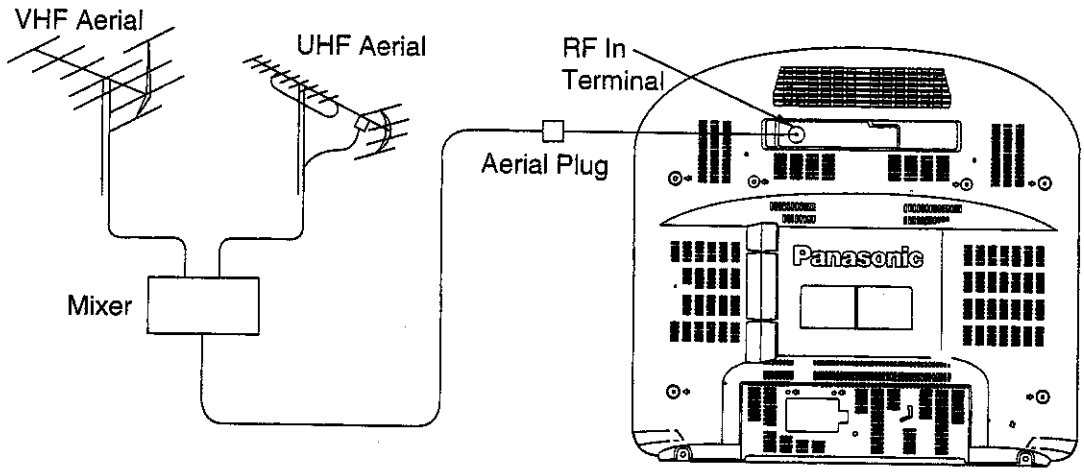
How to switch ON or OFF from STAND-BY mode 32
Programme Number Selection 32
Direct Programme Number Selection 32
Two Digit Programme Number Selection 32
Channel Select 34
Volume 34
TV/AV Selection 34
Normal 34
Mute 36
Recall 36
Off Timer 36
Sound System Selection 38
Colour System Selection 39

Picture Menu Selection 40
Feature Menu (Picture) 42
Feature Menu (VCR/GAME, NOISE TIMER and BLUE BACK) 44
Feature Menu (P.NR) 46

Play 50
Stop/Eject 50
FF (Fast Forward) 50
Rew (Rewind)/Review 51
Pause/Still 51
Rec (Record) 51
Repeat 52
F. ADV (Frame Advance) 52
Monitor 52
Slow 53
Tracking 53
SP/LP (Standard Play/Long Play) 53
Using the tape position Counter 54
Skip Search 55
Blank Search 55
Time Search 56
Auto Index Search 57
Auto Intro Search 57
Index Search 58
Intro Search 58

Preparation 70
ECHO Level 71
MIC Level 71

Connect the Aerial Cable to the RF In Terminal

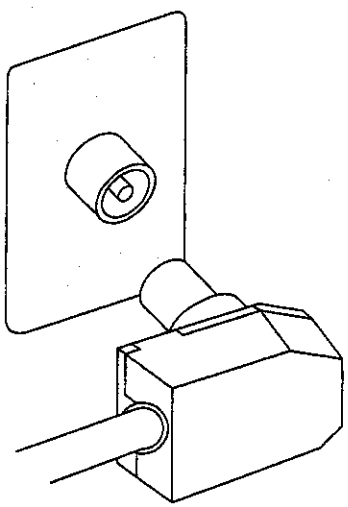


To obtain optimum quality picture and sound, an Aerial, the correct cable (75 Ohm coaxial) and the correct terminating plug are required.

Your local Authorised Service Centre or Dealer may be able to assist you in obtaining the correct Aerial system for your particular area and any accessories required.

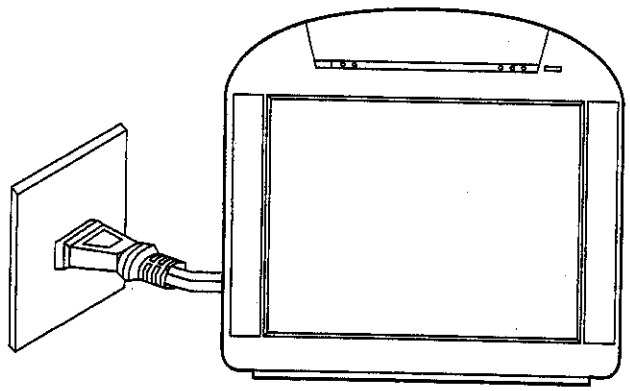
Any matters regarding Aerial installation, upgrading of existing systems or accessories required, and the costs incurred, are the responsibility of you, the Customer.

If a communal Aerial system is used, you may require the correct connection cable and plug between the wall Aerial socket and your television receiver.



75 Ohm Coaxial Cable

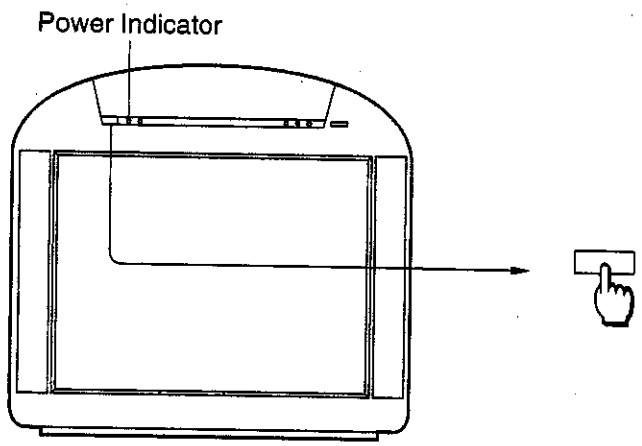
Connect the Plug to the wall outlet



For Power Source details, refer to page 78.

Note:
Mains plug types vary between countries. The mains plug shown at left may therefore not be the type fitted to your Unit.

How to turn the Power On



Push the Power switch on the Television to turn the set on.

The Power Indicator will light.
Stand-by----------Red
Power On----------Green

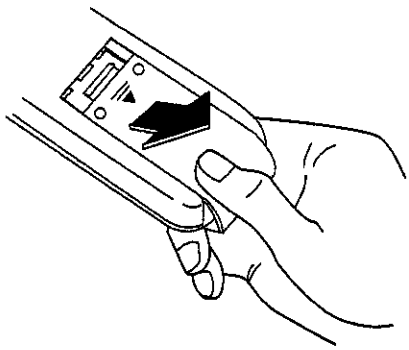
Note:
When in the Stand-by condition, it is possible to turn the TV set on by pushing
* the "Power (Stand-by)" button
* any of the "Direct Programme Number Selection" buttons (0–9)
* the Programme Number Up and Down buttons.

First Switch on from NEW

After you first switch on your Unit from NEW, and then push the "VCR" button (refer to pages 15 and 64), the TV/VCR will automatically turn on to "VCR CLOCK SET" Mode.
Refer to page 48 on how to Set the Clock.
If the "VCR" button is not pushed, the TV/VCR Unit will operate normally.
However the Clock will not be set, and this will inhibit such functions as Timer Recording.

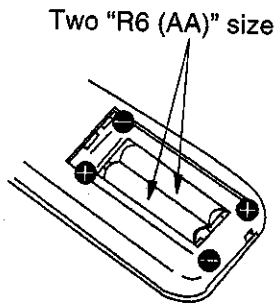
Battery Installation

1



Open the cover.
A slight downward pressure while pulling towards the bottom will ensure easy removal.

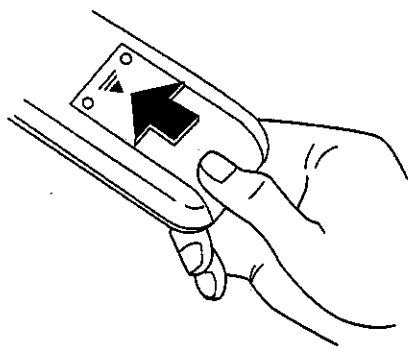
2



Batteries: Use two "R6 (AA)" size batteries.

Replace the batteries.
Insert the batteries ensuring correct polarity.
This is identifiable by the "+" and "–" symbols on both the batteries and inside the battery compartment.

3

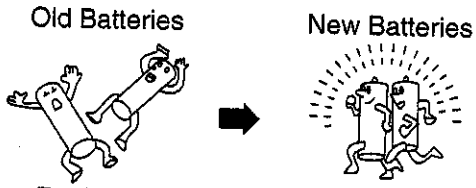


Replace the cover.

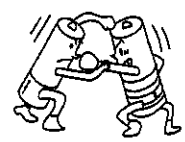
Do not use rechargeable (Ni-Cd) batteries.
They are different in shape and performance and may fail to ensure correct operation.

Battery precautions

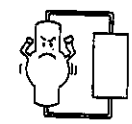
The incorrect use of batteries can cause electrolyte leakage which will corrode the Remote Control or cause the batteries to burst. The following precautions must be observed carefully;



Replace both batteries at the same time.



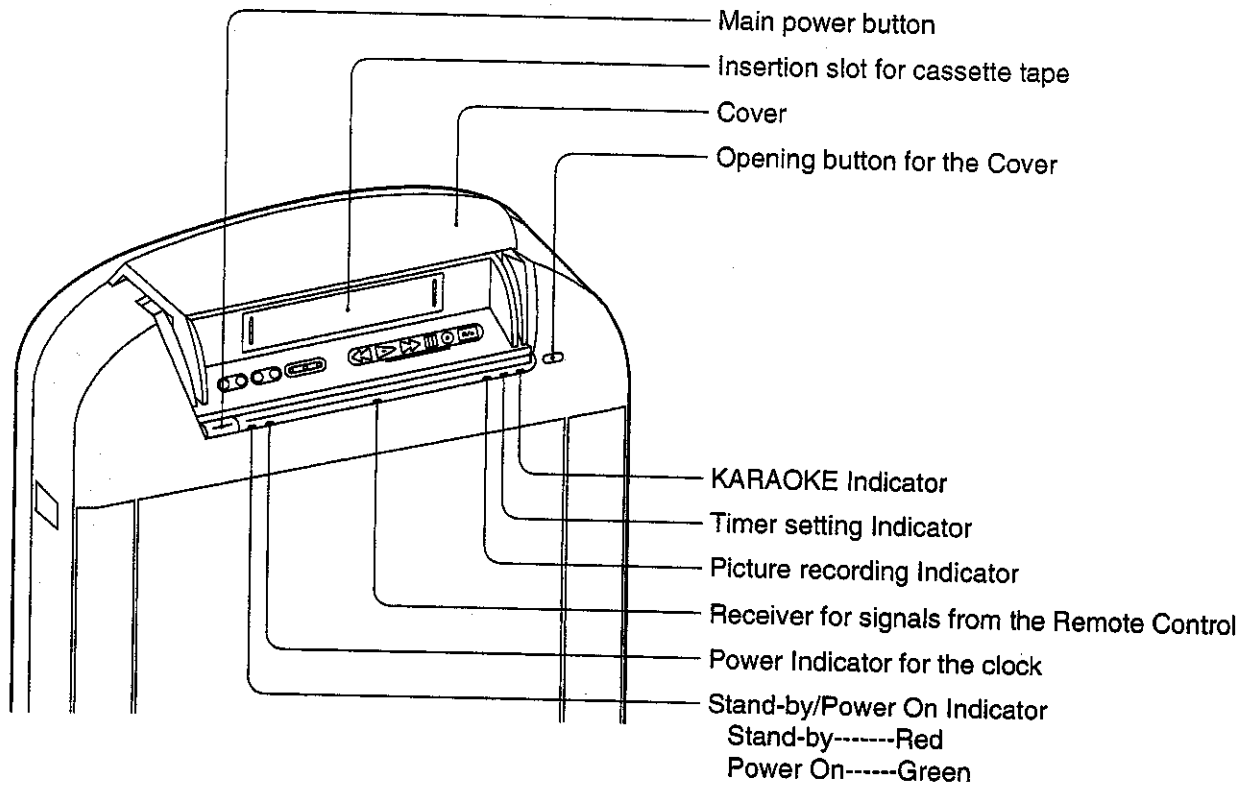
Don't mix battery types
(alkaline with carbon zinc, etc.)



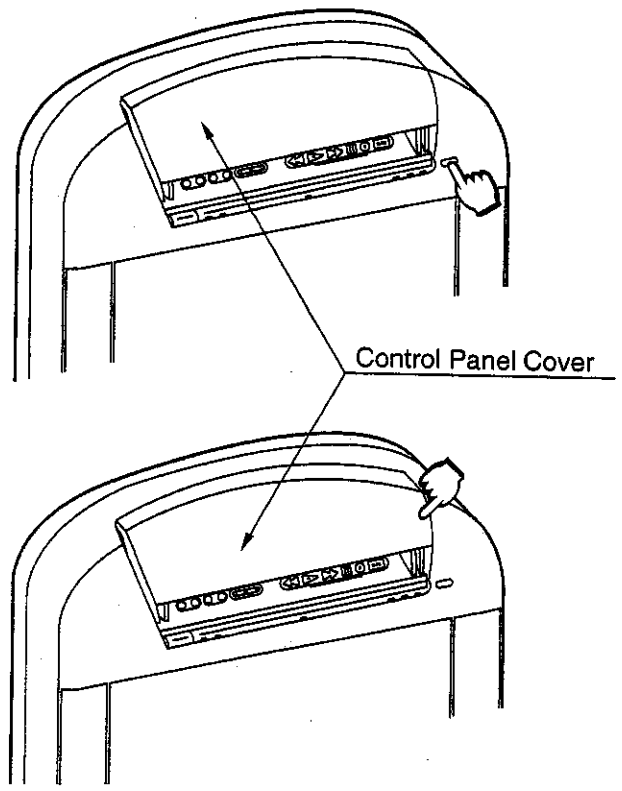
Don't Recharge.

Name	Ref. Page	Function
AUTO POWER ON	TC-W21 Feature	When the unit is in Stand-by, the power is automatically on the moment the video cassette tape is inserted.
AUTO COUNTER RESET	TC-W21 Feature	When a video cassette tape is inserted, the counter is reset to "0:00,00" automatically.
AUTO EJECT	TC-W21 Feature	When a tape without erasure prevention tab comes to an end, the tape is automatically rewound to the start and is then ejected.
REWIND SHUT OFF	Page 51	When the power is switched off during rewinding, the power of the TV is shut off immediately, but the power of the VCR will be shut off only after completion of tape rewinding.
AUTO PLAY	TC-W21 Feature	When a tape without erasure prevention tab is inserted, playback starts automatically.
AUTO REWIND	TC-W21 Feature	When the tape comes to an end after playback or fast forwarding, the tape is rewound to the start automatically.
AUTO REC EJECT	TC-W21 Feature	When the tape reaches its end during recording, it will automatically be rewound to the beginning and the tape will then be ejected. When the memory is set, the counter stops at "0:00,00".
AFC	Page 28	Automatic Frequency Control, also known as AFT (Automatic Fine Tuning), automatically keeps the TV tuned to the strongest part of a broadcast transmission.
MENU	Page 40~47	A list of available functions, displayed on the TV screen. Selecting a menu item in some cases brings up a second, more detailed Menu.
COLOUR SYSTEM	Page 39	Different countries encode the colour information content of the TV picture differently. The basic systems are; PAL, NTSC and SECAM, but there are many variations on these.
SOUND SYSTEM	Page 38	Different countries encode TV sound differently. The basic systems are; 4.5, 5.5, 6.0 and 6.5 MHz. (MHz = Mega Herts)

Front Control Panel



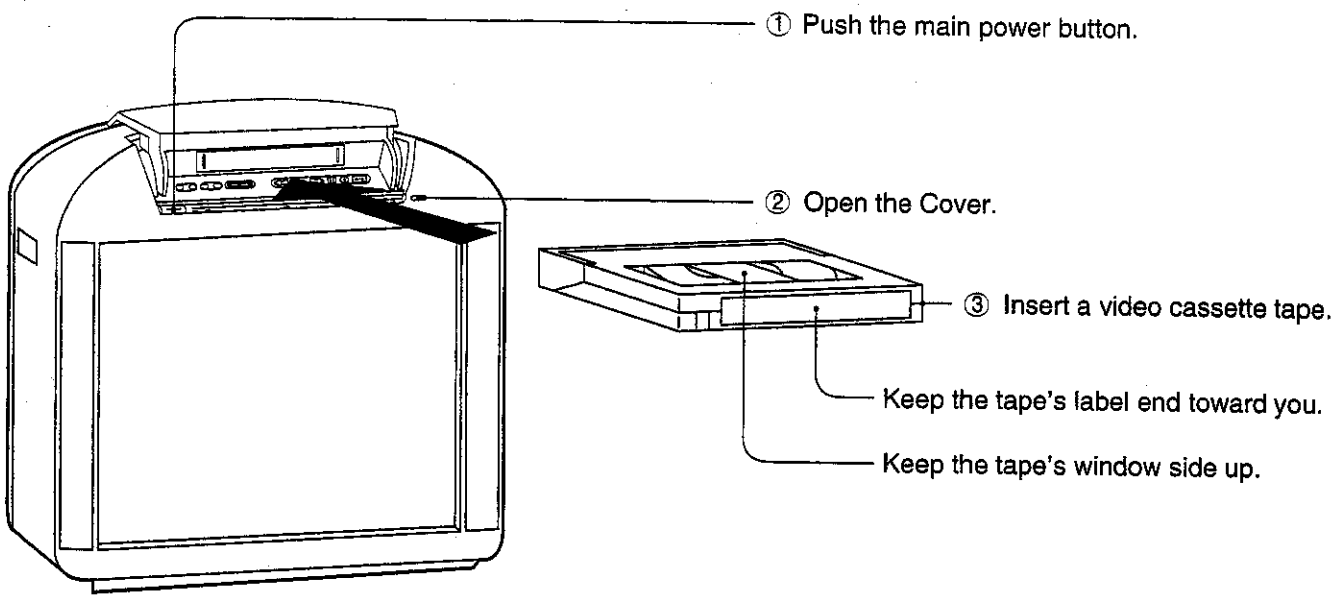
How to open the Control Panel Cover



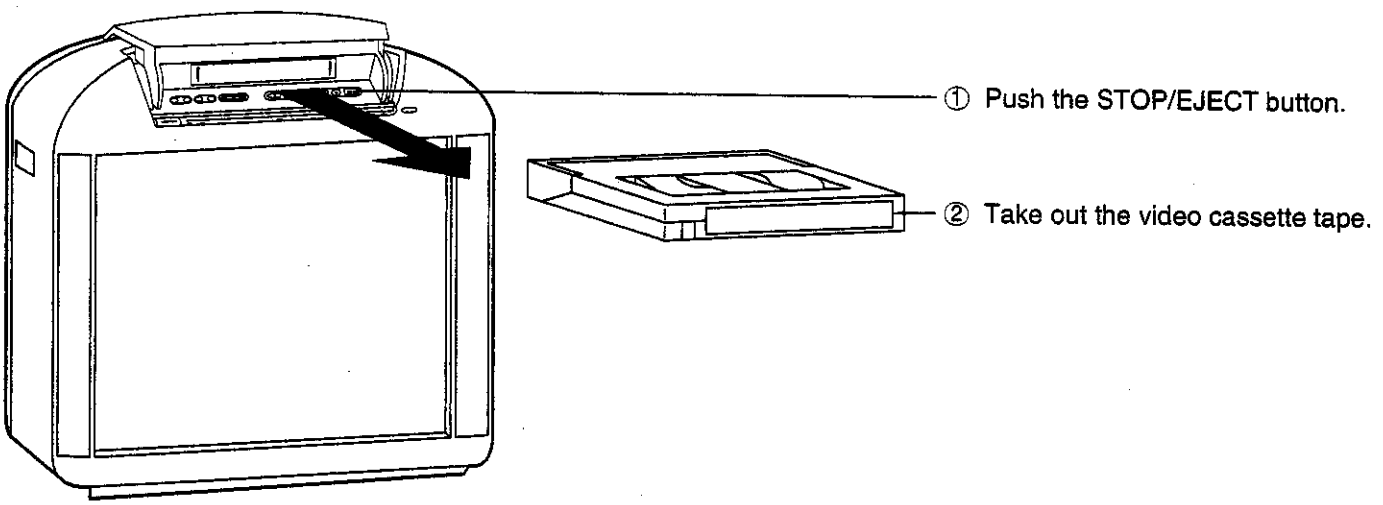
Push the button to open the Control Panel Cover.

Push the cover to close it.

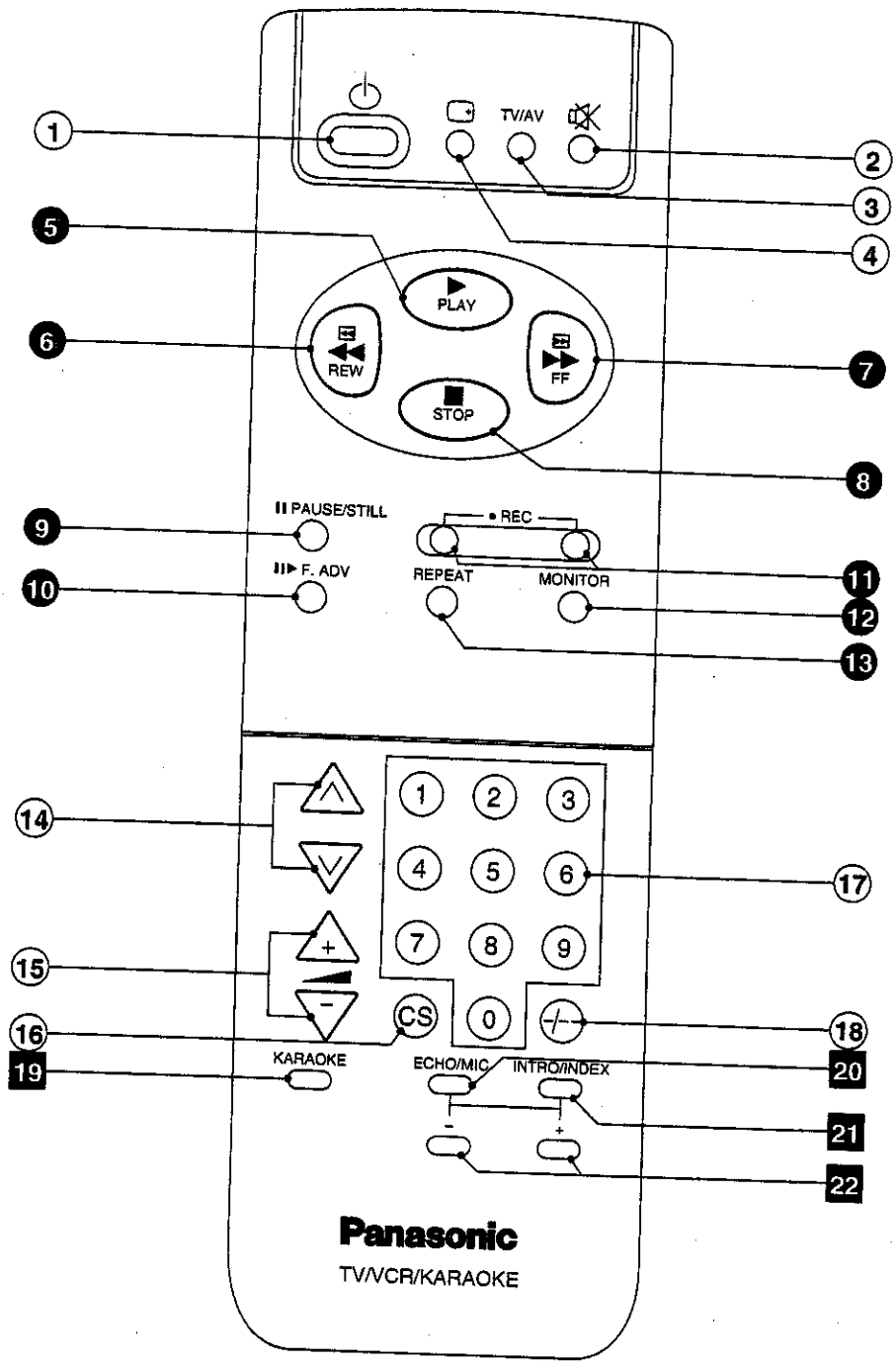
How to insert a Video Cassette Tape

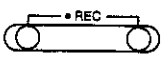
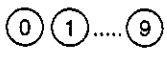
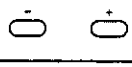

① Push the main power button.
② Open the Cover.
③ Insert a video cassette tape.
Keep the tape's label end toward you.
Keep the tape's window side up.

How to eject the Video Cassette Tape

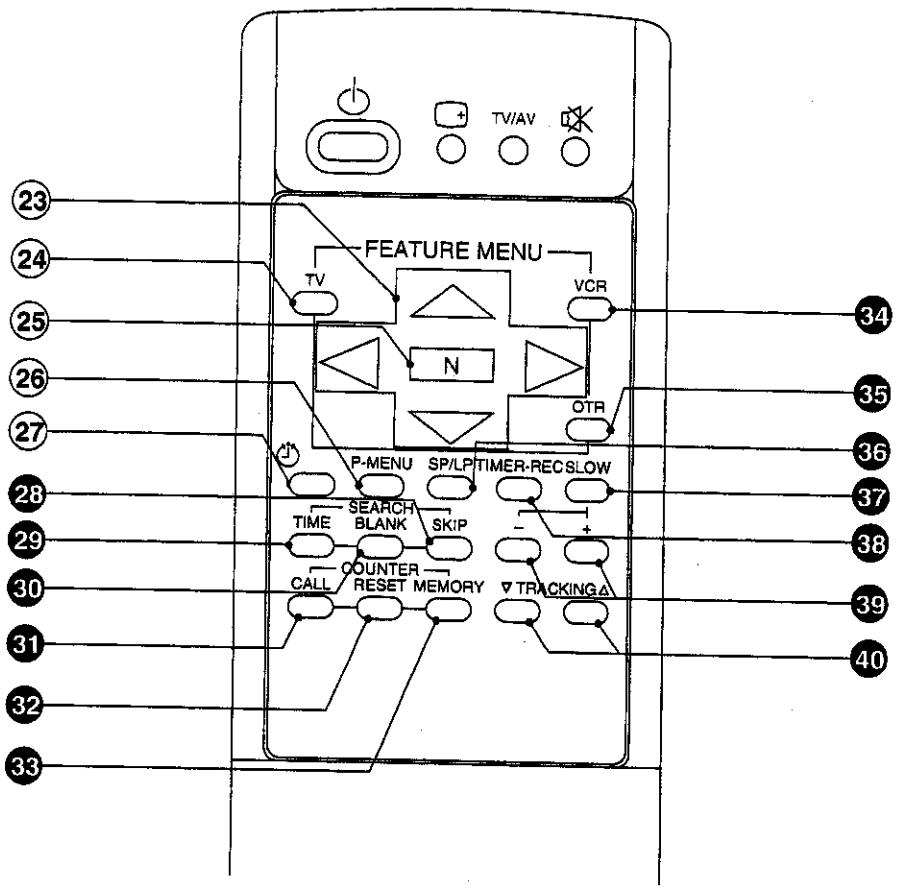


Remote Control



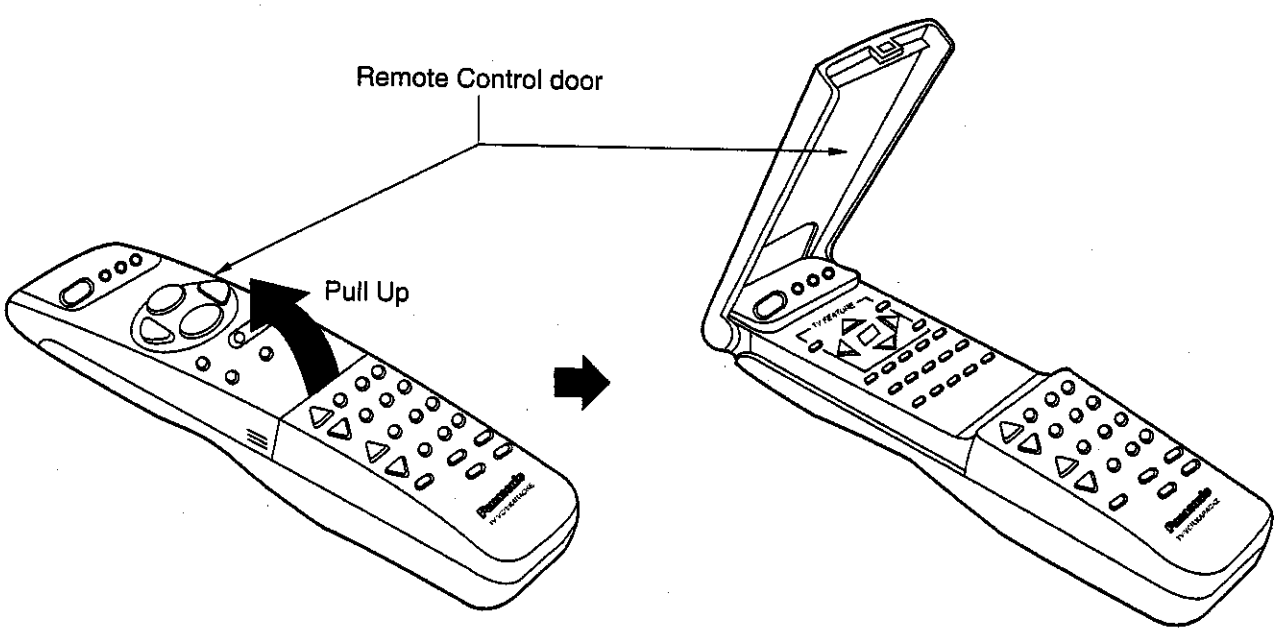
Item No.	Key	Function	Refer to Page
1		Power (Stand-by)	32
2		Sound Mute	36
3		TV/AV Selection	34
4		Recall (Status Display)	36
5		Play	50
6		Rew (Rewind)/Review	51
7		FF (Fast Forward)/Cue	50
8		Stop	50
9		Pause/Still	51
10		Frame Advance	52
11		REC (Record) Buttons	51
12		TV Monitor	52
13		Tape Repeat	52
14		Programme Number Up and Down Buttons	32
15		Volume Up and Down	34
16		Direct Channel Selection	34
17		Direct Programme Number Selection Buttons	32
18		Two Digit Programme Numbers Button	32
19		KARAOKE	70
20		ECHO/MIC (Microphone) Level Adjust	71
21		INTRO/INDEX	57, 58
22		Menu and Level Up and Down Buttons	58, 71

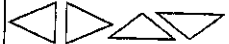
Buttons located under the Remote Control door



Helpful Hint

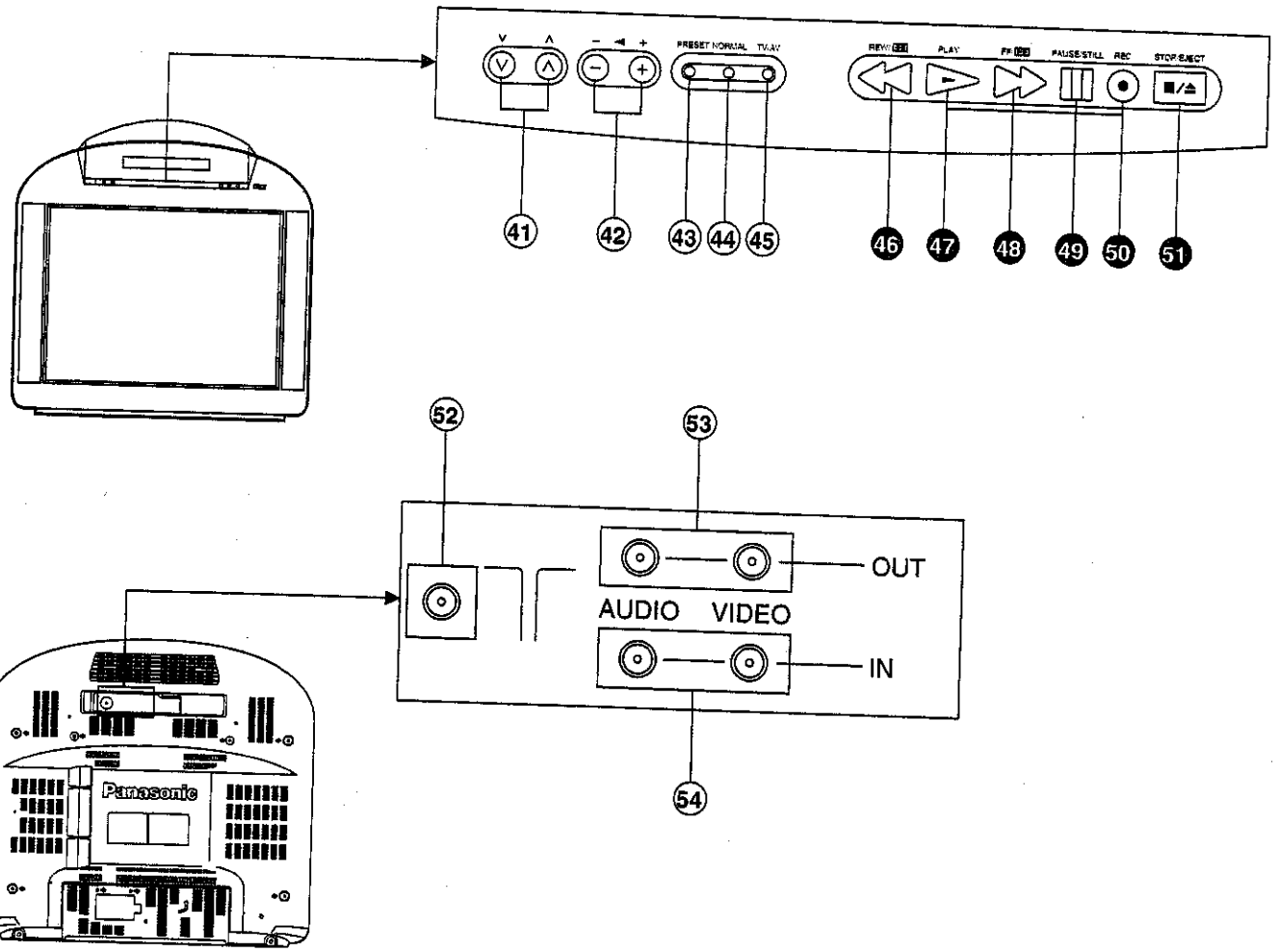
How to open the door on the Remote Control.

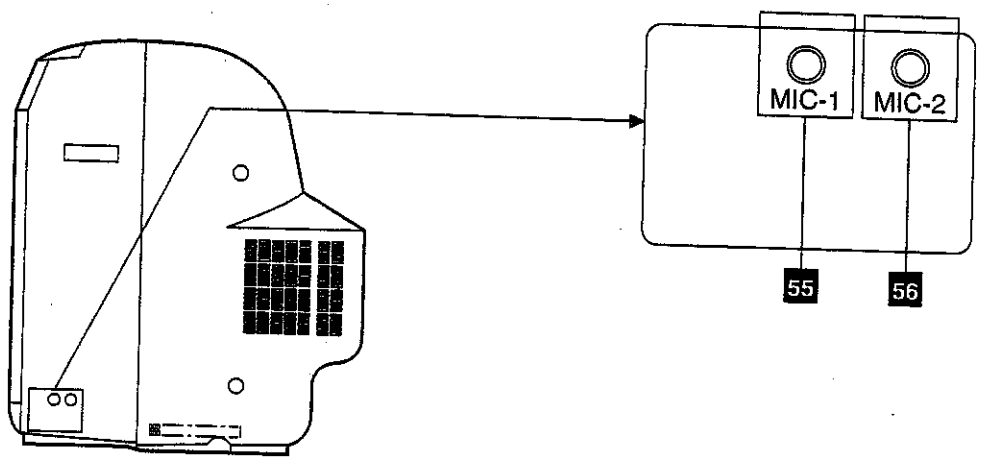


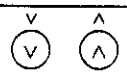
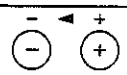
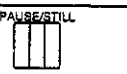
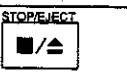
Item No.	Key	Function	Refer to Page
23		Position Buttons	42
24	TV	TV Feature Menu	42
25	N	Normalisation	42
26	P-MENU	Picture Menu	40
27	⏱	Off Timer	36
28	SKIP	Skip Search	55
29	TIME	Time Search	56
30	BLANK	Blank Search	55
31	CALL	Counter Call	54
32	RESET	Counter Reset	54
33	MEMORY	Counter Memory	54
34	* VCR	VCR Feature Menu	64
35	OTR	One-Touch Timer Recording	60
36	SP/LP	Recording Standard or Long Play Selection	53
37	SLOW	Slow Playback	53
38	TIMER-REC	Timer Record	67
39	- +	Slow Level Up and Down Buttons	53
40	▽TRACKING△	Tracking Adjustment Buttons	53

* **SPECIAL NOTE:**
If this button is pushed after your Unit is first switched on from NEW, it will automatically go into "VCR CLOCK SET" Mode. Refer to page 48 on how to set the Clock.

Controls and Terminals on the TV

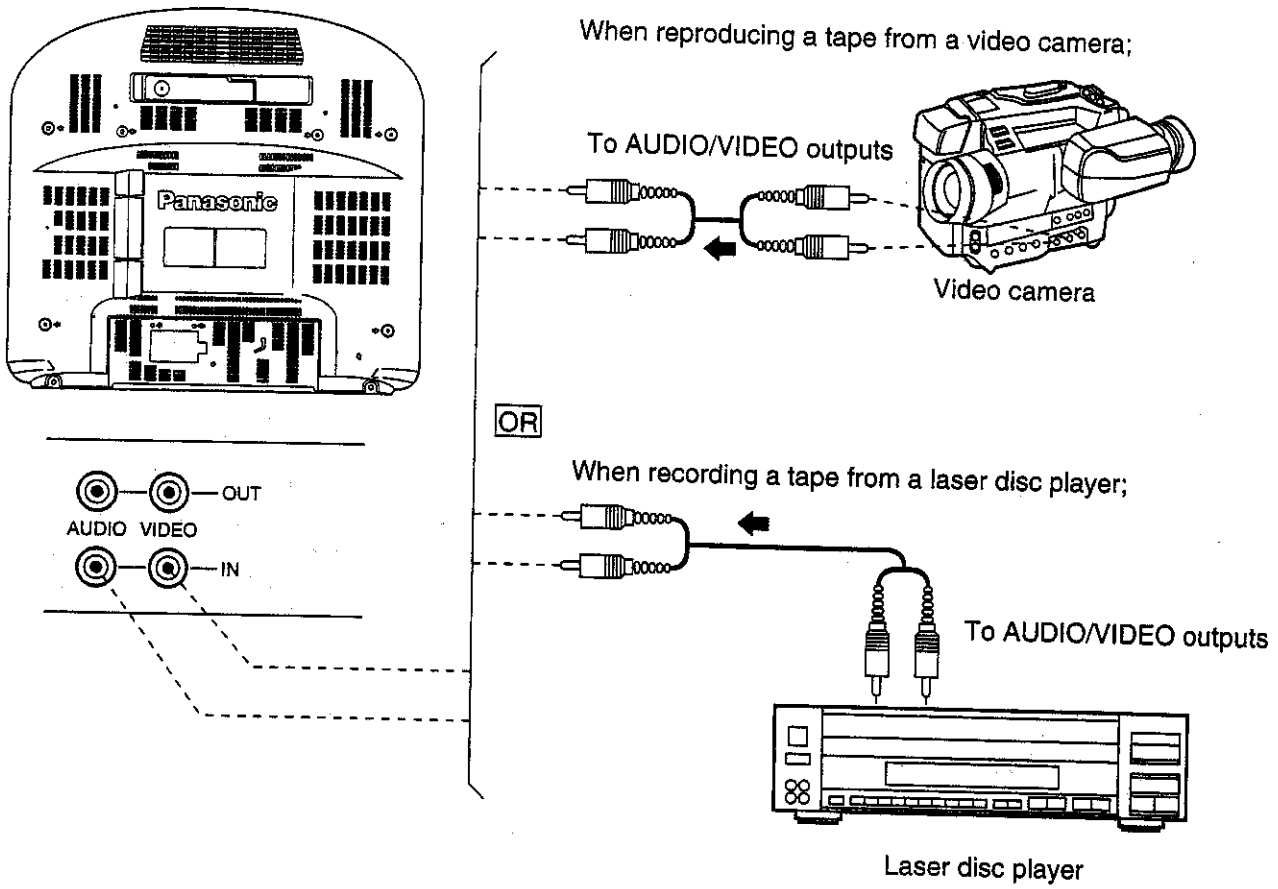




Item No.	Key	Function	Refer to Page
(41)		Programme Number Up and Down Buttons	32
(42)		Volume Up and Down Buttons	34
(43)		Preset	22, 24
(44)		Normalisation	34
(45)		TV/AV Selection	34
(46)		Rew (Rewind)/Review	51
(47)		Play	50
(48)		FF (Fast Forward)/Cue	50
(49)		Pause/Still	51
(50)		Record	51
(51)		Stop/Eject	50

Item No.	Description	Refer to Page
(52)	Aerial Terminal (RF In Terminal)	6
(53)	AV Output Terminals	19
(54)	AV Input Terminals	18
55	Microphone 1 Socket	21
56	Microphone 2 Socket	21

How to connect the "AV" (Video and Audio) Input Terminals to other equipment.



Note:

(1) When an AV mode is selected, and that AV mode has no input picture signal, the Background Colour of the TV screen will change. (When the Blue-Back function is set to the ON condition; refer to pages 44 and 45 for details.)

(2) Select AV Input by pushing the TV/AV button; refer to page 34.

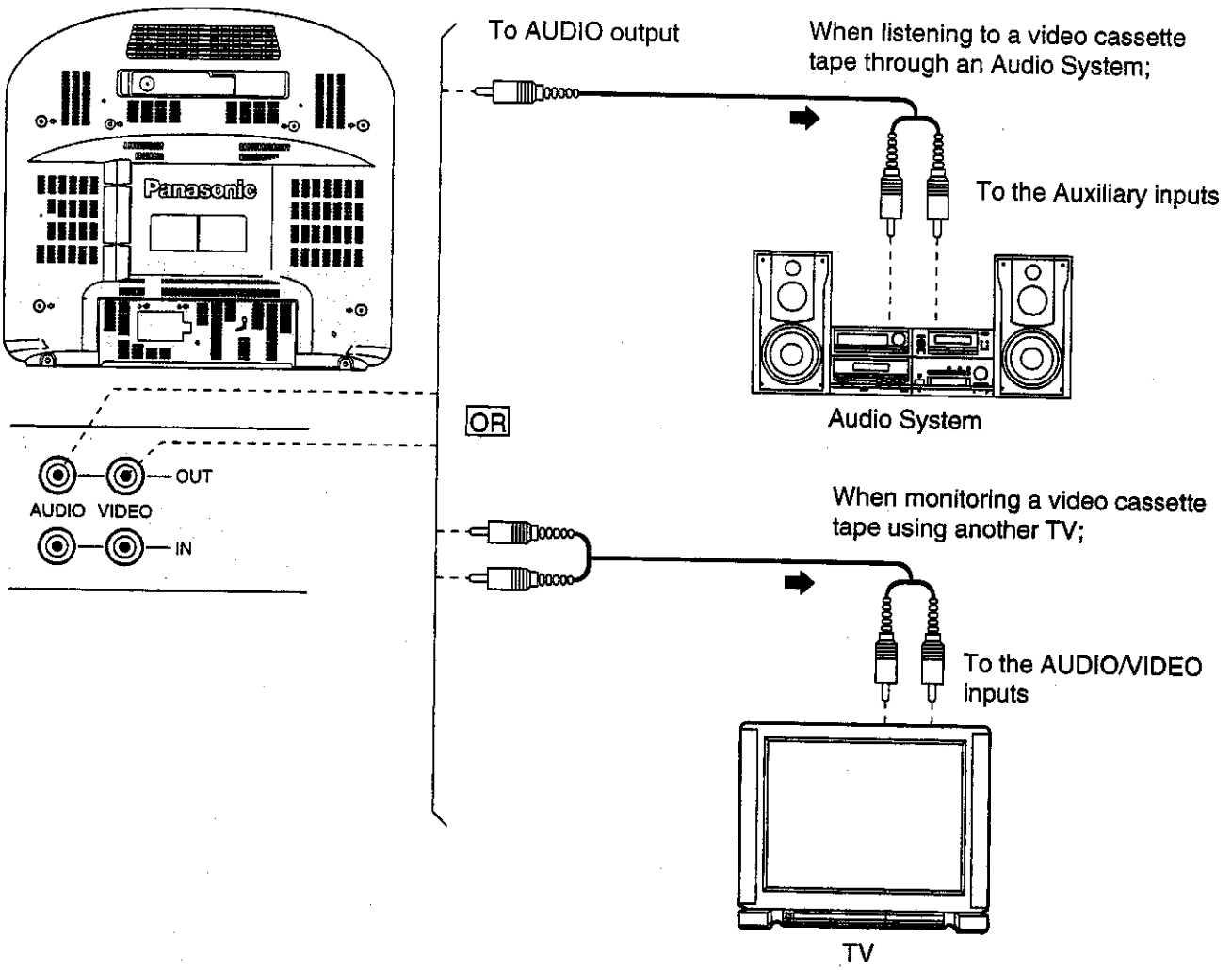
(3) Refer to the Instruction Manual supplied with each item of other equipment to be connected, for specific connection and operational details of that equipment.

Playback Operation

1. Select AV Mode.
2. Push the "PLAY" Button on the connected Playback Equipment.

How to connect the AV Monitor Output Terminals from the TV to other equipment.

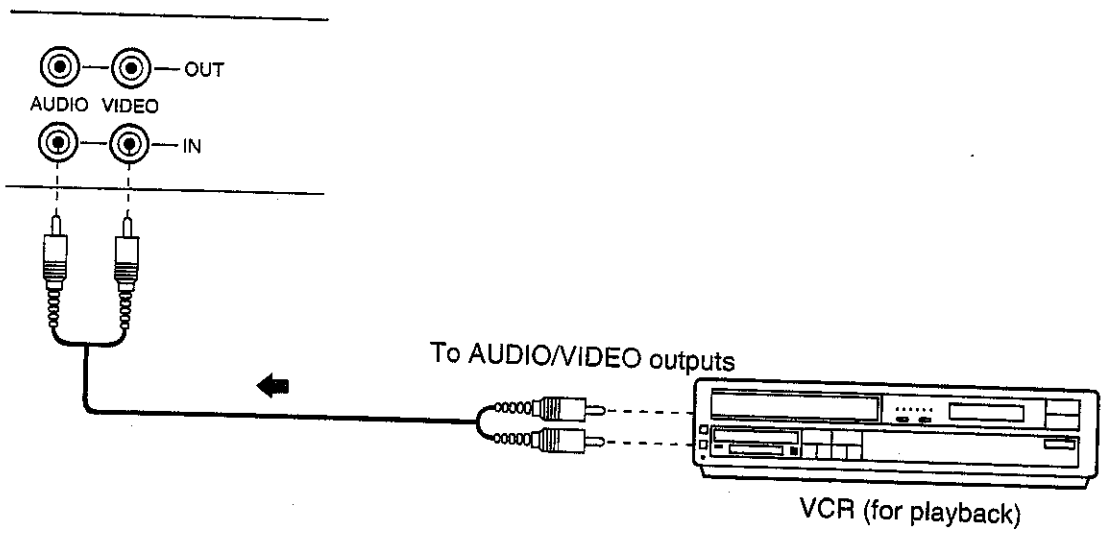
The "Monitor Out" Terminals output the same signals as are on the TV screen at that time.



Note:

- Never connect the same video recorder to both the VIDEO IN and VIDEO OUT Terminals on this TV set, as this could cause incorrect operation.

When reproducing a tape played on another VCR and recording to this VCR.



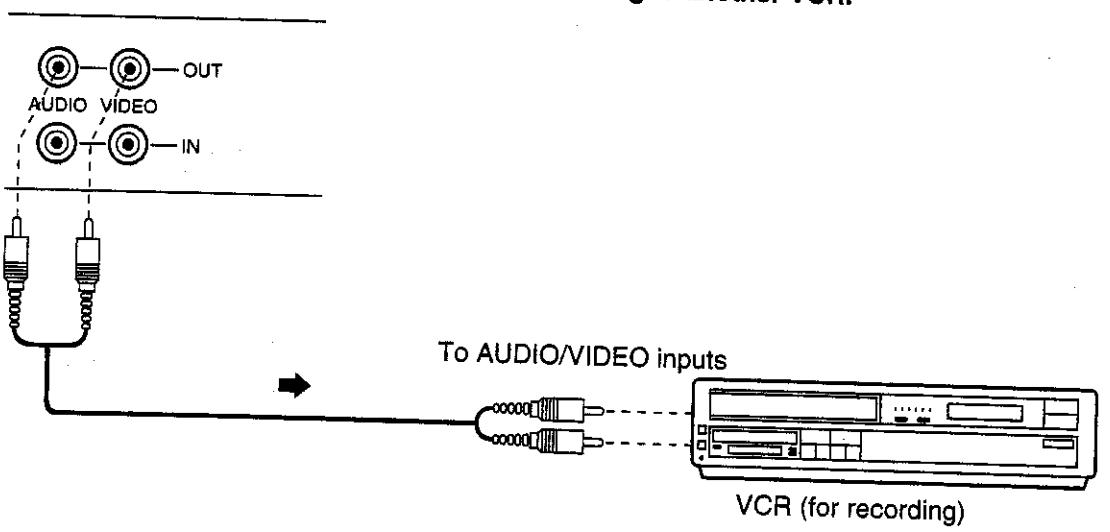
Operation

1. Set AV Mode using TV/AV button, and set this VCR to Recording Mode. Refer to page 60 when recording.
2. Set the VCR for playback to PLAY Mode.

Note:

- Refer to the Instruction Manual supplied with the VCR, used for Playback, if necessary.

When reproducing a tape played on this VCR and recording to another VCR.



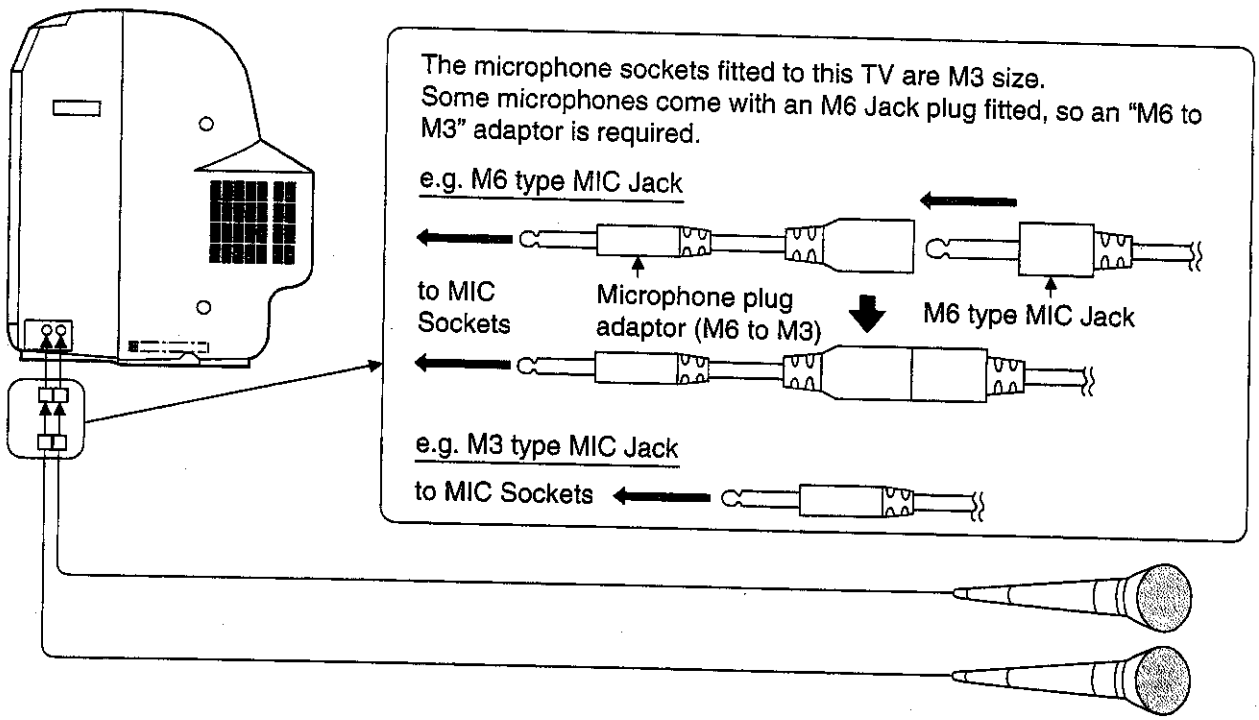
Operation

1. Set the VCR for recording to the RECORD Mode.
2. Set this VCR to PLAY Mode. (Refer to page 50)

Note:

- Refer to the Instruction Manual supplied with the VCR, used for Recording, if necessary.

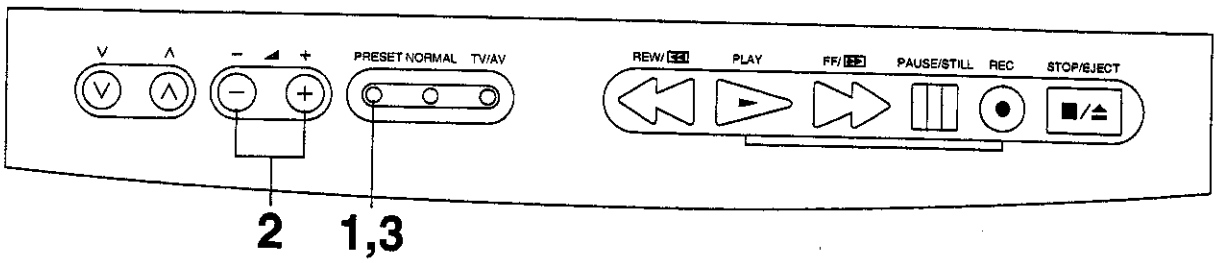
Connecting Microphones


The microphone sockets fitted to this TV are M3 size.
Some microphones come with an M6 Jack plug fitted, so an "M6 to M3" adaptor is required.
e.g. M6 type MIC Jack
to MIC Sockets
Microphone plug adaptor (M6 to M3)
M6 type MIC Jack
e.g. M3 type MIC Jack
to MIC Sockets

Note:

- An "M6 to M3" adaptor is supplied with the TV/VCR combination Unit. Use it with microphones fitted with M6 Jack plugs.
- "M6" type Jack plugs are also variously known as "Standard" or "6.5 mm" Jack plugs, and occasionally as "6.35 mm" Jack plugs.
- "M3" type Jack plugs are also variously known as "Mini", "Miniature" or, more correctly, "3.5 mm" Jack plugs.

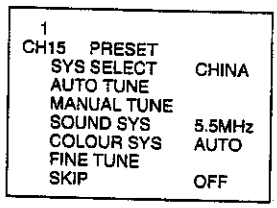
Country System Selection



Before AUTO SEARCH and MANUAL SEARCH, set the "SYSTEM SELECT" mode.

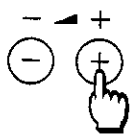
1

Push the "PRESET" Button.
The menu as shown at right will appear on the screen.

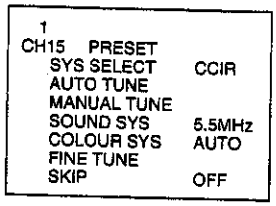


System Select Condition
The highlight cursor is on "SYS SELECT"

2



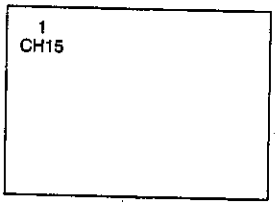
Select the appropriate System, refering to "System Select by country" as shown below and on the next page.



Select between "CCIR" and "CHINA".

3

Push the "PRESET" Button 7 times until the "PRESET MENU" on-screen display disappears.



Return to normal viewing.

System Select by Country

SYSTEM (On-screen Indication)	CCIR	CHINA
COUNTRY	Hong Kong Australia New Zealand Singapore Indonesia Thailand Malaysia	China
WHAT YOU SHOULD SELECT	If you are in any of the above countries, you should select "CCIR".	If you are in the above country, you should select "CHINA".

Note:

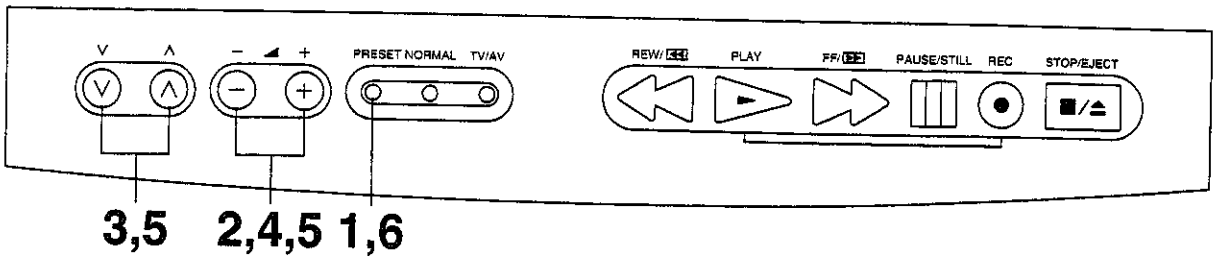
- "CCIR" is an abbreviation of the French Words for International Radio Consultative Committee. Here the term is used to refer to a (chiefly European) Standard for broadcast television channels.
  Some countries employ Slightly different TV channel designation numbers to those of the CCIR International Standard, for example Australia and New Zealand.
  Your combination TV/VCR employs the CCIR International Standard.
  Consequently, if you are in Australia or New Zealand, you should use the following Consequently, if you are in Australia or New Zealand you should use the following cross reference charts when using the "CS" Channel Select feature, detailed on page 34.
- The receiving channels are as follows;
  The On Screen Display shows the CCIR channel numbers. Use this table to Select equivalent Australian and New Zealand broadcast television channels.

	TV Broadcasts Channel No.														
CCIR	2	3	4	76	78	80	85	5	6	7	8	9	10	11	12
N. Z.	1	2	3					4	5	6	7	8	9		
Australia	0	1	2	3	4	5	5A	6	7	8	9		10	11	

	TV Broadcast Channel No.														
CCIR	28	29	30	31	31/32	32	33	34	35	36	37	38	38/39	39	40
Australia	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
CCIR	41	42	43	44	45	45/46	46	47	48	49	50	51	52	52/53	53
Australia	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
CCIR	54	55	56	57	58	59	59/60	60	61	62	63	64			
Australia	58	59	60	61	62	63	64	65	66	67	68	69			

Continued with the "Auto Search" Operation on pages 24 and 25, or with the "Manual Search" Operation on pages 26 and 27.

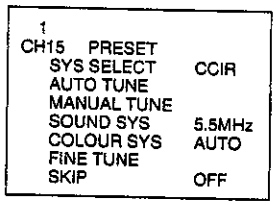
Automatic Search



This TV set will search automatically through all of the VHF and UHF bands.
After completion, the best tuning position is automatically memorised on each Programme Number sequentially.
After the "SYSTEM SELECT" Operation, carry out this procedure (or Manual Search).

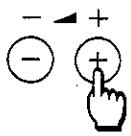
1

Push the "PRESET" Button twice.

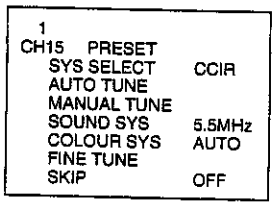


The highlight cursor moves to the AUTO TUNE position.

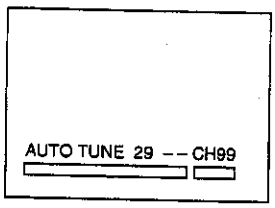
2



Push the Volume Up "+" or Down "–" Button.

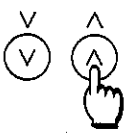


Start automatic tuning search.

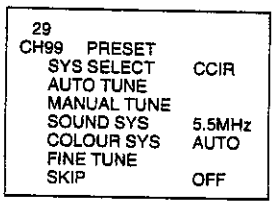


The best tuning position is automatically memorised.

3

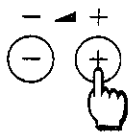


After all stations are tuned, the on-screen display will automatically change from the "AUTO TUNE" to the "SOUND SYS" Position.
Confirm the sound condition of each Programme Number by using the Programme Number Up "∧" Button.
If the Sound is not clear or no sound is produced on a Programme Number, then follow the next step, Step 4.

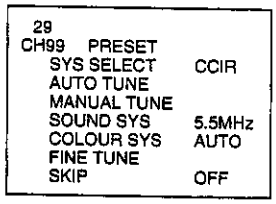


The highlight cursor moves to the SOUND SYS position.

4



If necessary, push the Volume Up "+" or Down "–" Button, to improve the Sound quality.



The sound indicator will change as follows.

↱ 4.5MHz ↔ 5.5MHz ↰
↳ 6.5MHz ↔ 6.0MHz ↲

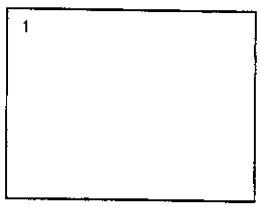
Refer to page 9 for an explanation of these systems.

5

Use the Programme Number Up "∧" button to sequentially check each station.
If necessary, repeat step 4 for each Programme Number.

6

After all stations are tuned, push the "PRESET" Button 4 times.



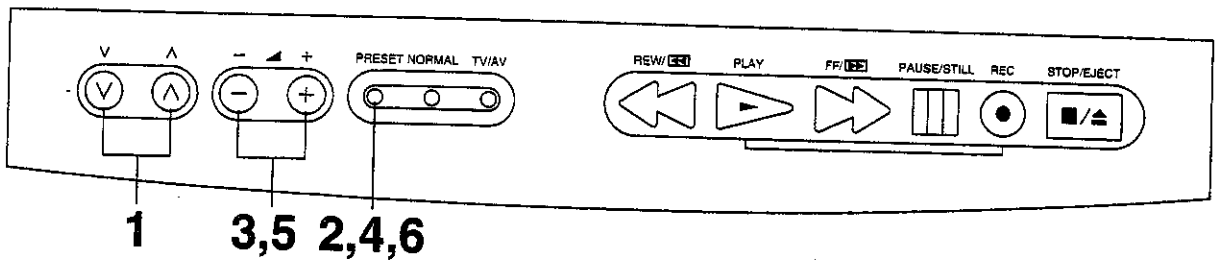
This returns the set to the normal viewing condition.
A maximum of 29 channels can be programmed.

Helpful Hint

(1) If a clear picture cannot be obtained even when a Broadcast or AV signal is received, refer to the "Colour System Selection" Operation on page 39.
(2) After the Automatic Search is finished, push the Programme Number "Up" Button to confirm the tuning condition for each Programme Number. If a Programme Number is unused, it is possible to skip such Programme Numbers.
Please refer to the Programme Number Skip Operation on page 30.
(3) The Menu on the screen during this procedure is called the "Preset Menu".
You can select Items or further (Sub-) Menus from it by repeated pushing of the "Preset" button, which will take you through the following Items;

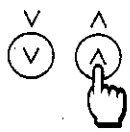
↱ SYS SELECT → AUTO TUNE → MANUAL TUNE → SOUND SYS → COLOUR SYS ┐
└ TV MODE ← SKIP ← FINE TUNE ←

Manual Search

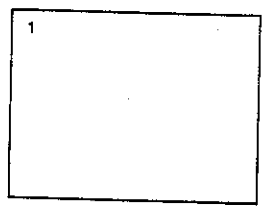


After the "SYSTEM SELECT" Operation, carry out this procedure (or Auto Search).

1



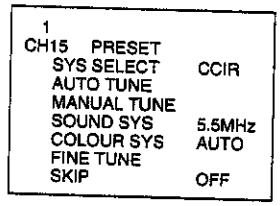
Push either the Programme Number Up "∧" or Down "∨" Button.



Select the desired Programme Number.

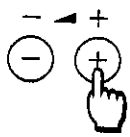
2

Push the "PRESET" Button 3 times.



The highlight cursor moves to the MANUAL TUNE position.

3

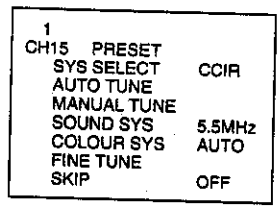


Push the Volume Up "+" or Down "–" Button.

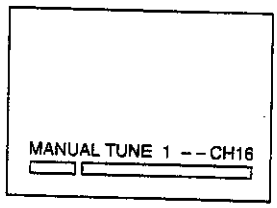
Volume "+": Next higher Channel

Volume "–": Next lower Channel

Note:
You can also select a specific channel by pushing the desired channel number after pushing the CS button. (Refer to page 34 and, if necessary, consult the cross-reference charts on page 23)



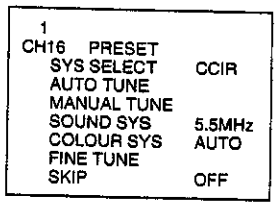
Start manual tuning Search.



The best tuning position is automatically memorised.

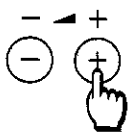
4

Push the "PRESET" Button.

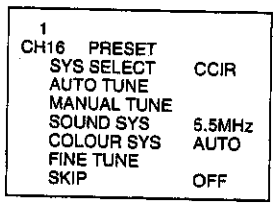


The highlight cursor moves to the SOUND SYS position.

5



If the sound is not clear or no sound is produced on a Programme Number Position, push the Volume Up "+" or Down "–" Button.



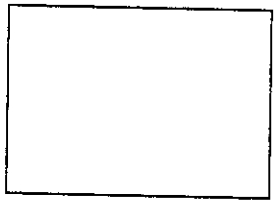
You may improve the Sound quality.

The sound indicator will change as follows.

→ 4.5MHz ↔ 5.5MHz ←
→ 6.5MHz ↔ 6.0MHz ←

6

Push the "PRESET" Button 4 times.



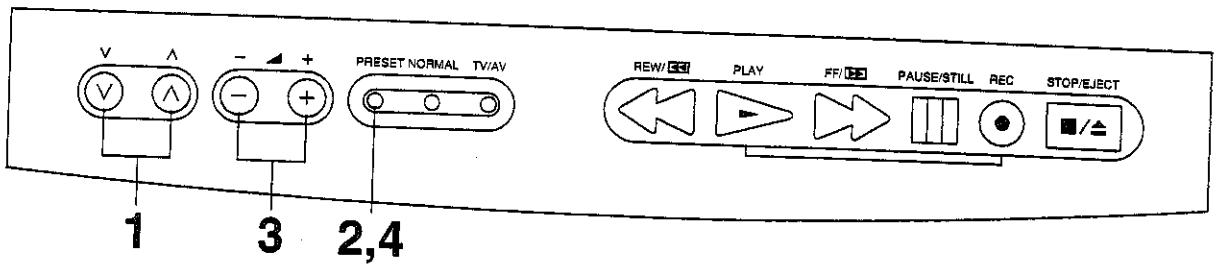
This returns the set to the normal viewing condition.

Helpful Hint

(1) If a clear picture cannot be obtained even when a Broadcast or AV signal is received, refer to the "Colour System Selection" Operation on page 39.

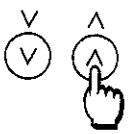
(2) After the Manual Search is finished, push the Programme Number "Up" Button to confirm the tuning condition for each Programme Number. If a Programme Number is unused, it is possible to skip such Programme Numbers. Please refer to the Programme Number Skip Operation on page 30.

Fine Tuning

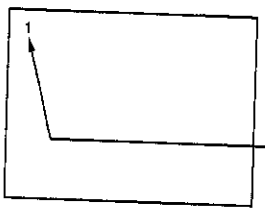


Under normal reception conditions this function is not used. However, in areas of poor reception or constant interference, a slight adjustment of the tuning may improve the picture and sound quality.

1



Select the channel which you want to improve.

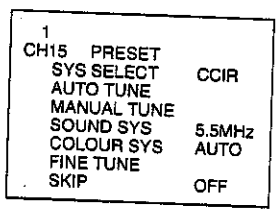


Select the desired Programme Number.

Programme Number

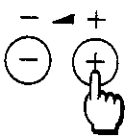
2

Push the "PRESET" Button 6 times.

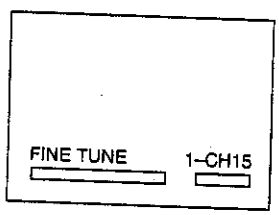


The highlight cursor moves to the FINE TUNE position.

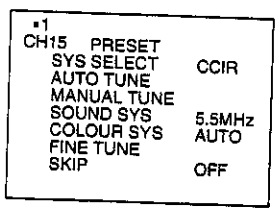
3



Push and hold the Volume Up "+" or Down "–" Button until a clearer picture is received.



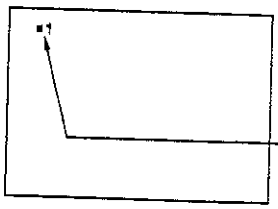
Start Fine tuning.



The AFC (Automatic Frequency Control) function is deactivated, and the "■" symbol appears to the left of the Programme Number.

4

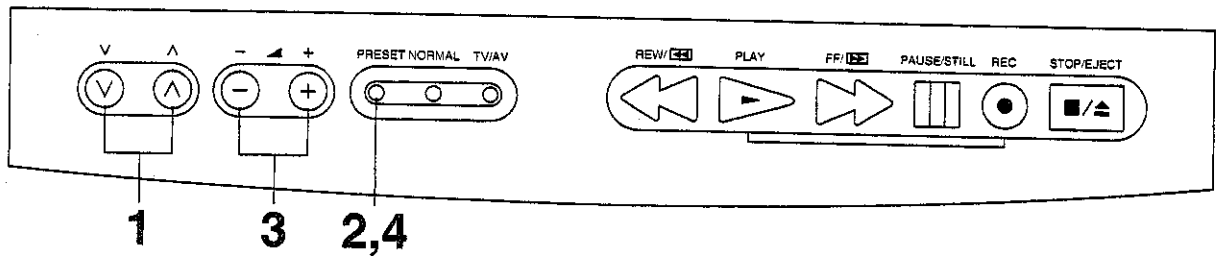
Push the "PRESET" Button twice.



This returns the set to the normal viewing condition.

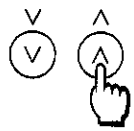
Programme Number with AFC OFF indicator

How to Cancel the Fine Tuning Function

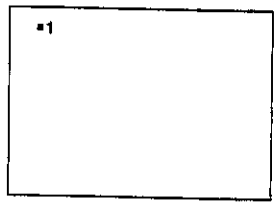


Cancelling previously adjusted (manually) fine tuning, means re-activating the AFC (Automatic Frequency Control) Function, also known as AFT (Automatic Fine Tuning).

1



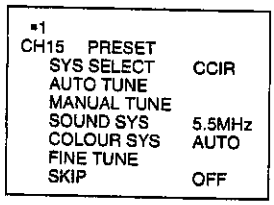
Select the "AFC OFF" Programme Number which you want to return to Automatic Frequency Control (cancel the manual fine tuning).



When a Programme Number with AFC set to OFF is selected, the "■" symbol appears to the left of the Programme Number.

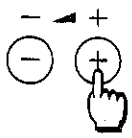
2

Push the "PRESET" Button 3 times.



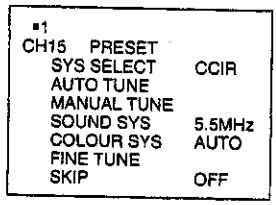
The highlight cursor moves to the MANUAL TUNE position.

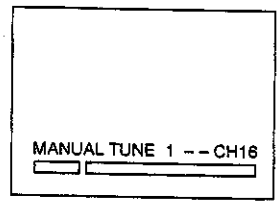
3



Push the Volume Up "+" or Down "–" Button, briefly.

Manually tune away from the broadcast transmission, then change buttons and tune back to it.

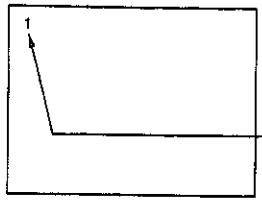




Such adjustment of MANUAL TUNE automatically restores AFC to the ON condition and cancels previous manual fine tuning.

4

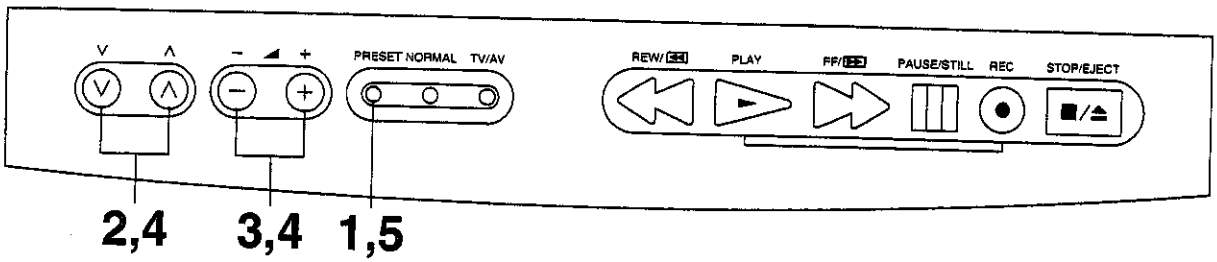
Push the "PRESET" Button 5 times.



This returns the set to the normal viewing condition.

No "■" means AFC is set ON

Programme Number Skip



This function makes it possible to skip Programme Numbers on which no TV stations are tuned. The function is only effective when selecting TV stations by pushing the Programme Number Up or Down Buttons either on the TV set or the Remote control.

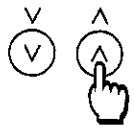
1

Push the "PRESET" Button 7 times.

```
1
CH15  PRESET
   SYS SELECT      CCIR
   AUTO TUNE
   MANUAL TUNE
   SOUND SYS       5.5MHz
   COLOUR SYS      AUTO
   FINE TUNE
   SKIP            OFF
```

The highlight cursor moves to the SKIP position.

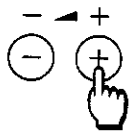
2



Select a Programme Number you want to skip.

```
1
CH15  PRESET
   SYS SELECT      CCIR
   AUTO TUNE
   MANUAL TUNE
   SOUND SYS       5.5MHz
   COLOUR SYS      AUTO
   FINE TUNE
   SKIP            OFF
```

3



Push the Volume Up "+" or Down "–" Button.

```
1
CH15  PRESET
   SYS SELECT      CCIR
   AUTO TUNE
   MANUAL TUNE
   SOUND SYS       5.5MHz
   COLOUR SYS      AUTO
   FINE TUNE
   SKIP            OFF
```

```
1
CH15  PRESET
   SYS SELECT      CCIR
   AUTO TUNE
   MANUAL TUNE
   SOUND SYS       5.5MHz
   COLOUR SYS      AUTO
   FINE TUNE
   SKIP            ON
```

The highlighted "OFF" condition changes to "ON". The skip function is now set, for that particular Programme Number.

4

Repeat Steps 2 and 3 for the remaining Programme Numbers for which the Skip function is desired.

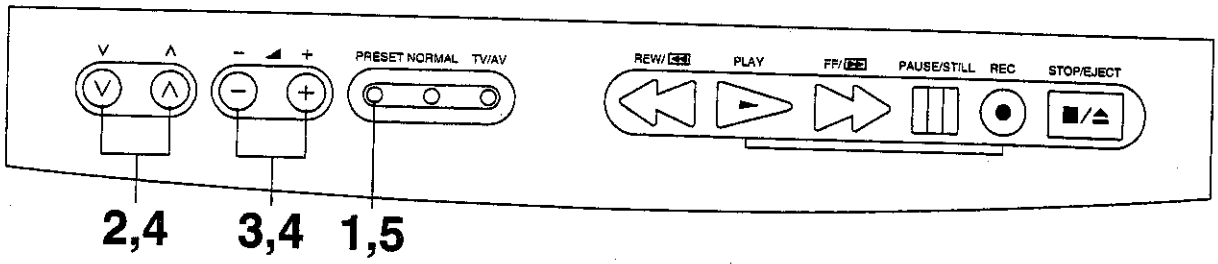
5

After the Skip Operation is completed, push the "PRESET" Button.

```
1
```

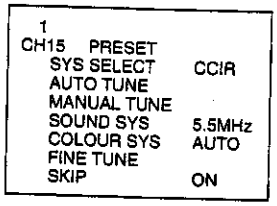
This returns the set to the normal viewing condition.

How to Cancel the Skip Function



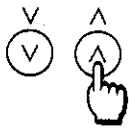
1

Push the "PRESET" Button 7 times.

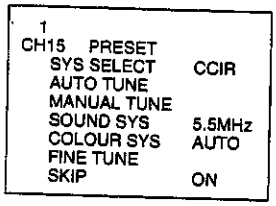


The highlight cursor moves to the SKIP position.

2

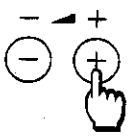


Select the skipped Programme Number.

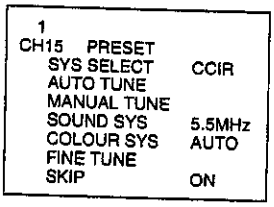


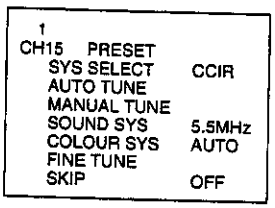
The "SKIP ON" indicator will appear on the screen.

3



Push the Volume Up "+" Button.





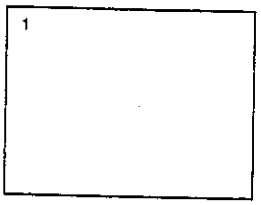
The highlighted "ON" condition changes to "OFF". The skip function is now cancelled, for that particular Programme Number.

4

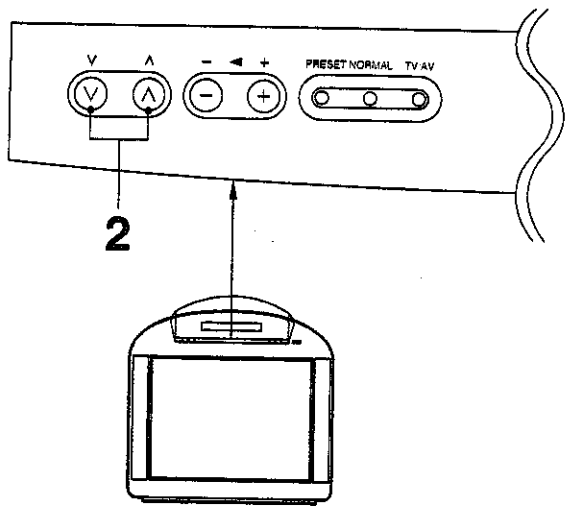
Repeat Steps 2 and 3, if you wish to cancel the skip function on any other Programme Number.

5

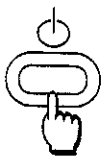
After the Skip Cancel Operation is completed, push the "PRESET" Button.



This returns the set to the normal viewing condition.



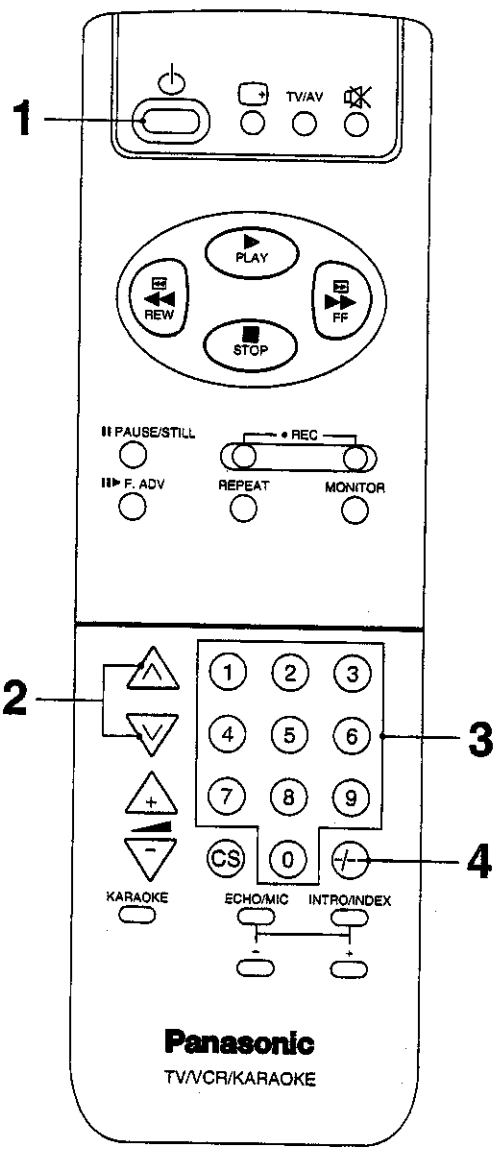
1



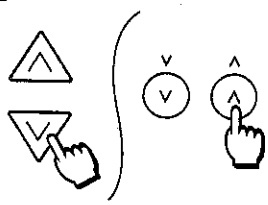
(The TV set must be turned on.)
How to switch ON or OFF from STAND-BY mode.
Push this button to turn the TV set ON from STAND-BY mode.

Push it again to return the TV set to STAND-BY mode.

Power for the TV is separated from that for the VCR section. When the power is switched off during recording/rewinding, power for the TV is shut off immediately, but the power for the VCR is shut off after completion of recording/ rewinding.



2



Programme Number Selection (Select your desired programme number)
Push the Programme Number Up "∧" or Down "∨" Button to select the next higher or lower tuned channel.

3

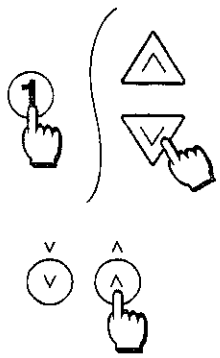
Direct Programme Number Selection (Programme Numbers 0-9)
e.g. To select Programme Number "7", push the "7" Button.

4

Two Digit Programme Number Selection
e.g. To select Programme Number "24";
Push the "-/- -" Button, then

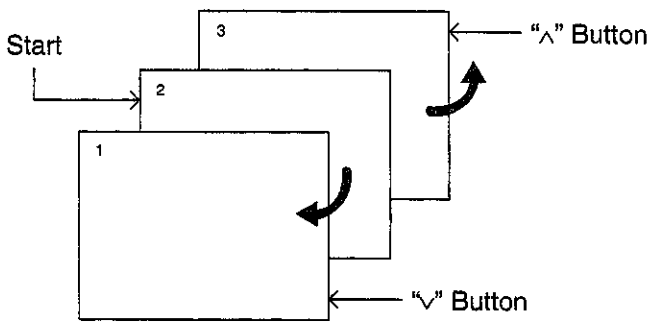
push the "2" Button, and then

push the "4" Button.

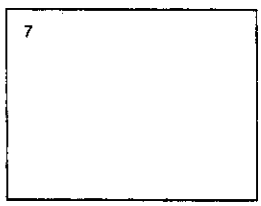


It is also possible to turn the TV set on by pushing the "Direct Programme Number Selection" Buttons (0–9) or the "Programme Number Up or Down" Buttons.

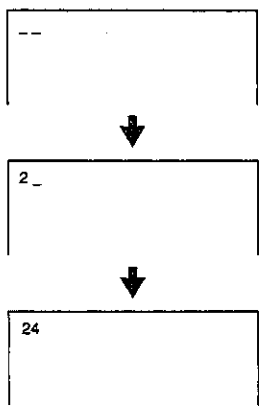
Note:
1. Do not leave the television in the Stand-by condition for extended periods of time.
   It is also recommended that you turn the Television Off, for a short (approximately 1 hour) period, using the Main Power ON/OFF Switch periodically (e.g. weekly).
2. This allows, when the television is again turned on, Automatic Demagnetization of the picture tube to be carried out.
   If the television is not turned Off at the Power switch for an extended period, poor picture Colour Quality may become evident through residual magnetism within the picture tube.



Note:
If the SKIP function has been set in either the next higher or lower Programme Number, then that skipped Programme Number will not be shown.

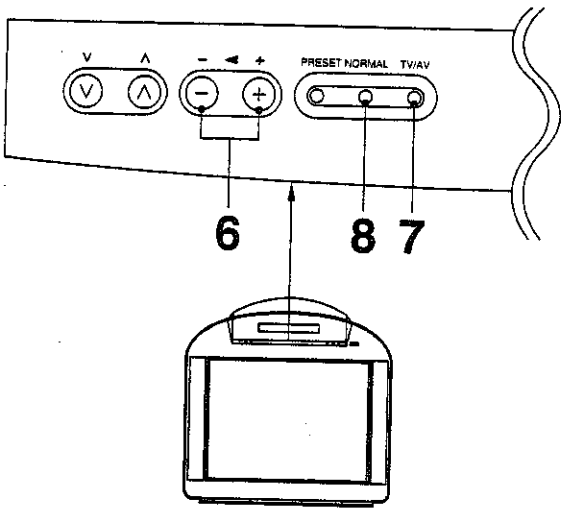


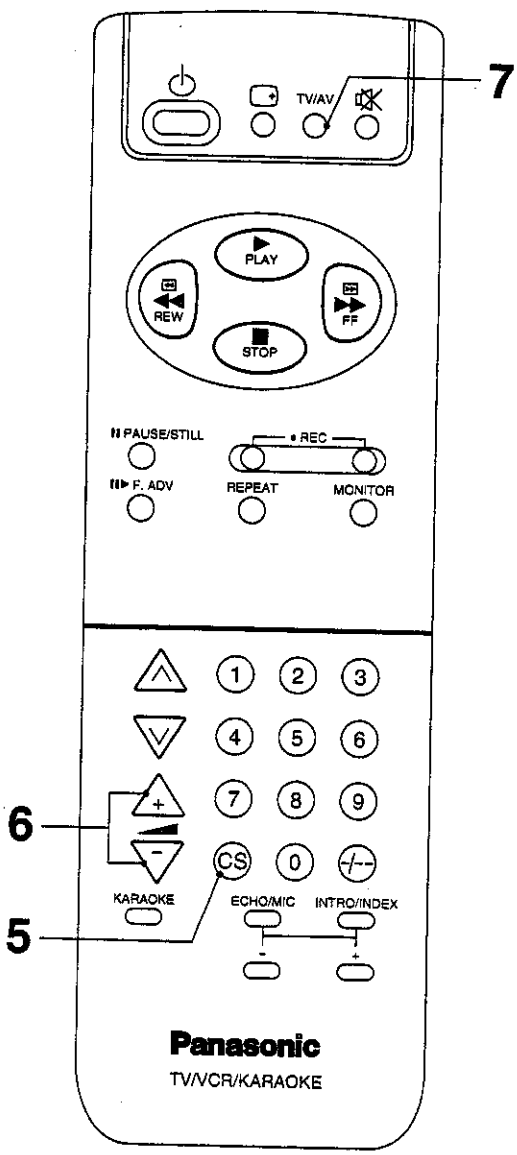
You can select the numbers 0 to 9 directly, by pushing the corresponding number on the Remote Control.



You can select a two digit Programme Number.

Continued on the next page. ➔





5

Channel Select Button
You can select the actual channel number which can be received in your area directly with the Remote Control.
Push the "CS (Channel Select)" Button.
Then select the desired channel directly. (Refer "Note")
e.g. To select Channel Number "12".

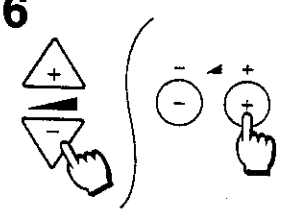
Push the "CS" Button, then

push the "1" Button, and then

push the "2" Button.

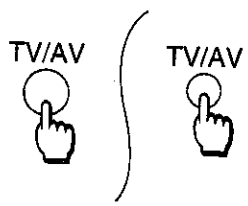
Note:
You may need to refer to the cross reference tables listed on page 23, for Australian and NZ use.

6



Volume
Push the Volume Up "∧" or Down "∨" Button to increase or decrease the sound volume level.

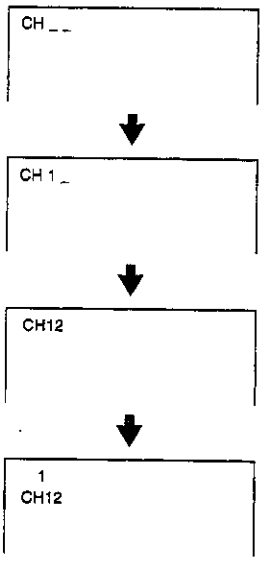
7



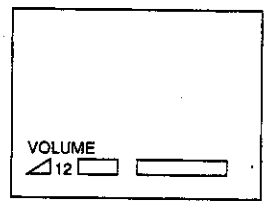
TV/AV Selection
Push the "TV/AV" Button to select TV, AV input signal modes.

8

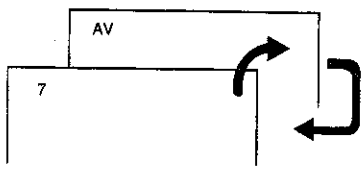
Normal Button (On the TV itself)
When this button is pushed, the Picture menu will change to Picture 2 (DYNAMIC), and each control level will be changed to the standard factory setting. For Picture menu details, refer to page 40.



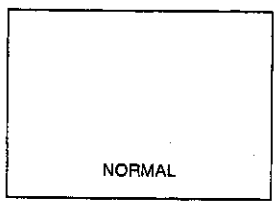
Note:
If the sound is not clear or no sound is produced on a Channel position, refer to the "Sound System Selection" Operation on page 38.
Channels selected by using the "CS" button follow the CCIR channel numbering system.
For information on how to relate CCIR channel numbers to Australian and New Zealand channel numbers, refer to page 23.



Note:
The on-screen display will indicate both numerically and graphically the volume level. Numeric levels start at "0" for no sound, and will increase up to 63 which is the maximum sound level.

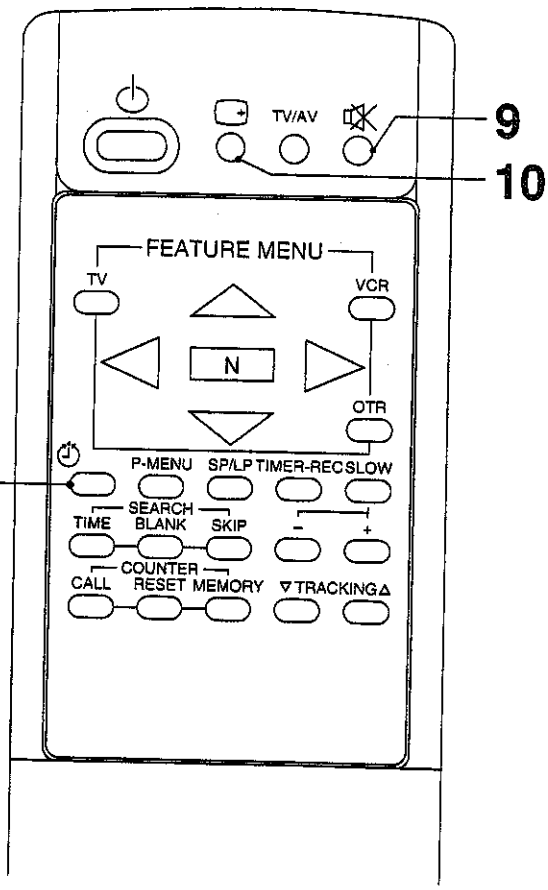


You can sequentially select TV and AV modes.
Note:
(1) When AV mode is selected and the selected AV mode has no picture signal, the Background colour of the TV screen will change. (When Blue Back is set to the ON condition. Refer to pages 44 and 45.)
(2) When TV mode is selected again, the previous Programme Number will re-appear on the screen.



Note:
The function of the Normal button on the TV itself differs to that of the Normal button on the Remote Control.
For Normal button function using the Remote Control, refer to pages 42 and 43.

Continued on the next page. ➡



Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

9

Mute Button
Push this button once to mute the sound by 50%.

Push again to mute the sound completely.

Push once again to restore the previous sound level, and cancel the mute.

10

Recall Button
Push the "Recall" Button.

Information about the current status of the Unit will appear on the screen.

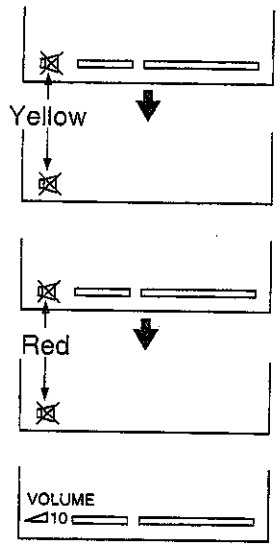
When the On-screen is displayed, push the Recall Button until the On-screen disappear.

11

Off Timer Button
The TV set may be preset to switch off after a fixed period.

To confirm the remaining time, push the "Recall" Button.

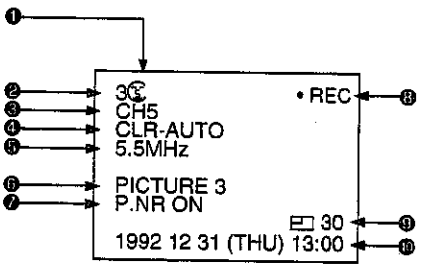
When the timer is preset during recording, recording continues till the end time of the timer preset and then the power of the VCR is shut off.



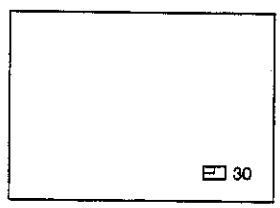
The on-screen display will appear Yellow for 2-3 seconds, followed by the Yellow mute symbol, which will remain while the mute function is active.

The previous sound level will appear in Red.
The "Mute" symbol will remain unchanged.

Note:
In the "Mute" condition, you can use the Volume "Down" Button, which won't cancel the mute function.
Using the Volume "Up" Button, the "Mute" will be cancelled.



❶ VCR/GAME Indicator (Page 44)
❷ Programme Number (Page 32)
❸ Programme Name (Page 34)
❹ Colour System (Page 39)
❺ Sound System (Page 38)
❻ Picture Menu (Page 40)
❼ P.NR on or off (Page 46)
❽ REC Indicator (Page 60)
❾ OFF Timer (Page 36)
❿ Present date (Page 48)

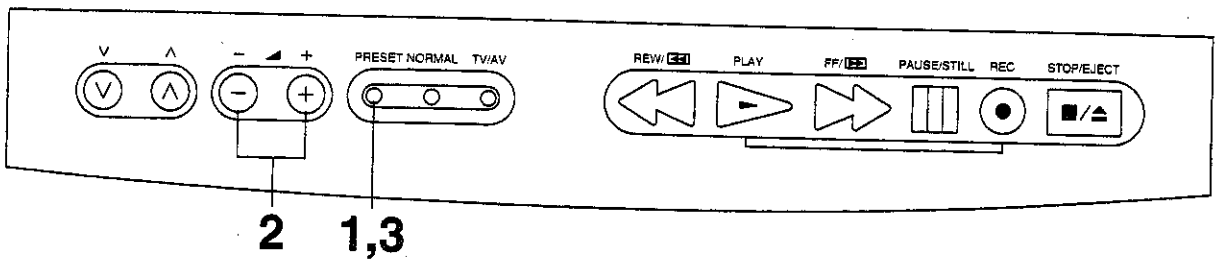


By pushing the "OFF-Timer" Button, you can select the preset times of either "30", "60" or "90" minutes.

30 → 60 → 90
↑ 0 ←

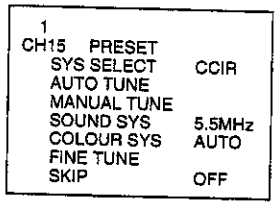
Note:
The Pre-set time may be cancelled by setting the Preset time condition to "0" using the "Off timer" Button, or by switching the set OFF.
The OFF Timer clock will flash prior to automatic turn off.

Sound System Selection



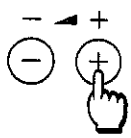
1

(This function is used only in the TV mode.)
When the Sound is not clear or no sound is produced on a Programme Number, push the "PRESET" Button 4 times.

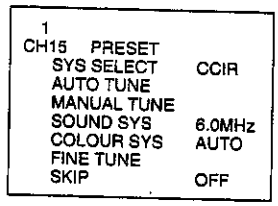


The highlight cursor moves to the SOUND SYS position.

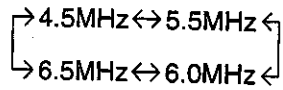
2



Push the Volume Up "+" or Down "–" Button repeatedly until the optimum sound is obtained.

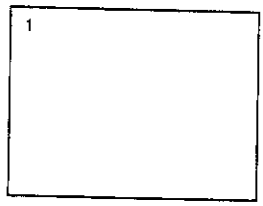


You may improve the sound condition.
The sound system will change as shown.



3

Push the "PRESET" Button 4 times.

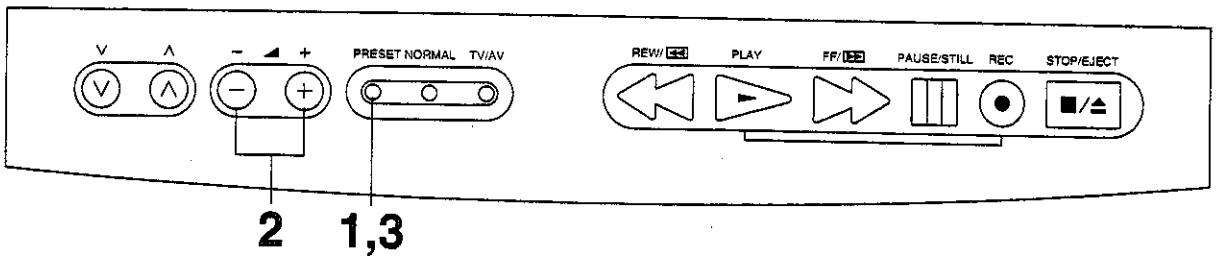


This returns the set to the normal viewing condition.

The selected sound system is automatically memorised.

Note:
Refer to page 9 for an explanation of "Sound System".

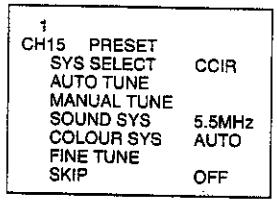
Colour System Selection



1

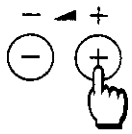
PRESET

If a clear picture cannot be obtained when a Broadcast or AV signal is received, push the "PRESET" Button 5 times.

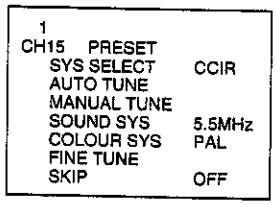


The highlight cursor moves to the COLOUR SYS position.

2



Push the Volume Up "+" or Down "–" Button repeatedly until the optimum image is produced.



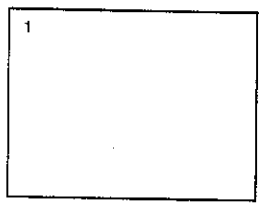
You may improve the colour condition.
The colour system will change as shown.

AUTO ↔ PAL
↑ ↑
↳NTSC↲

3

PRESET

Push the "PRESET" Button 3 times.

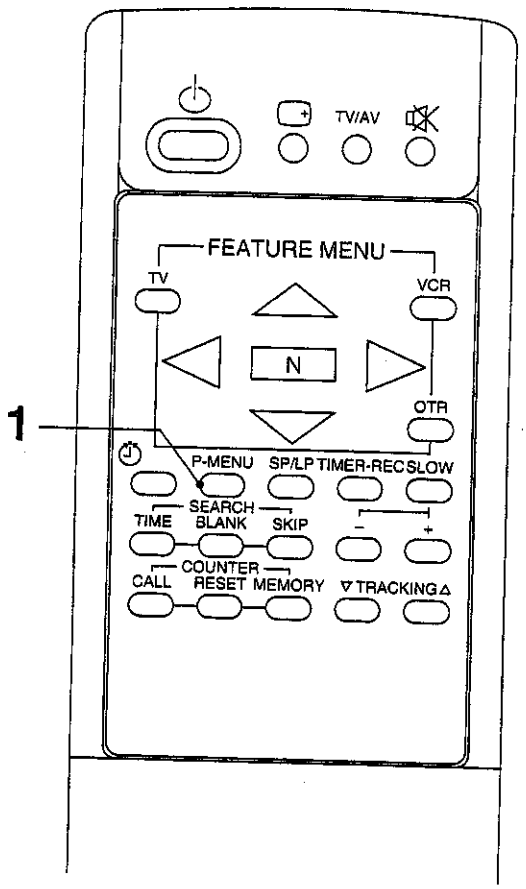


This returns the set to the normal viewing condition.

The selected colour system is automatically memorised.

Note:
Refer to page 9 for an explanation of "Colour System".

Picture Menu Selection

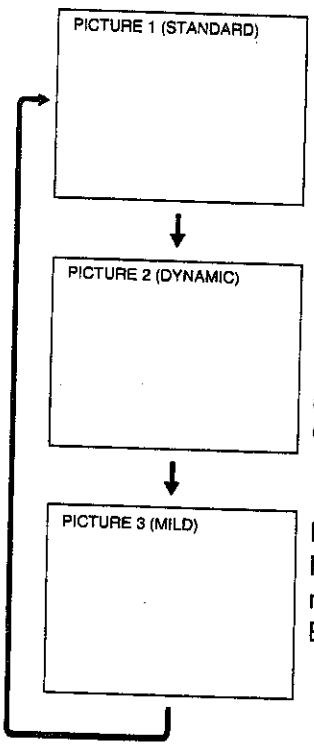


Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

1

Picture Menu Select Operation
By pushing the "PICTURE MENU" Button, you can sequentially select any one of the three Picture Menus (STANDARD, DYNAMIC or MILD).

You can change the level of each Function for each Picture Menu. Please refer to pages 42 and 43. Controllable Functions include COLOUR, NTSC-TINT, BRIGHTNESS, CONTRAST and picture SHARPNESS.

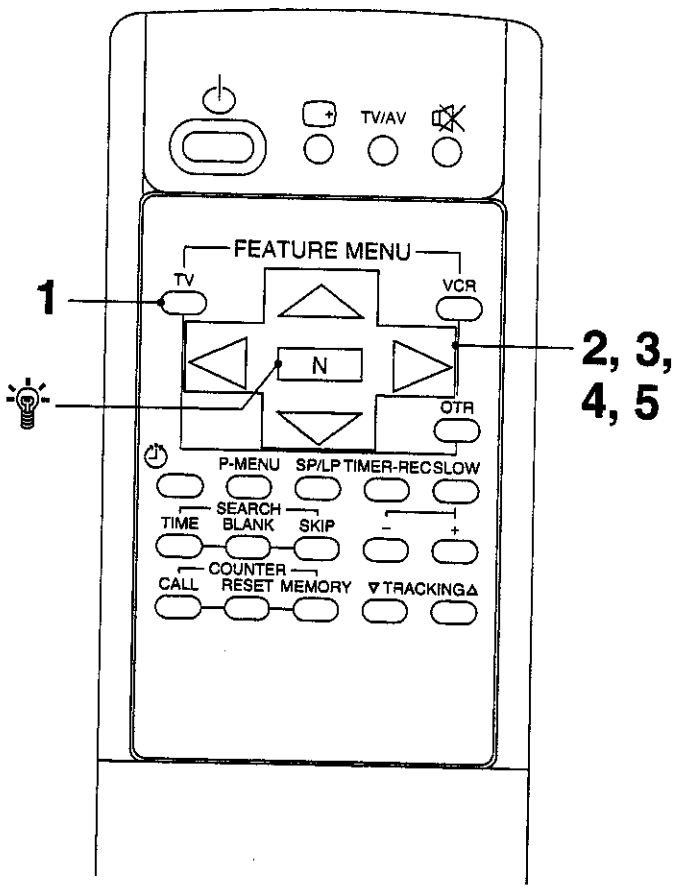


PICTURE 1 (STANDARD)
For watching in normal (evening lighting) environments. This menu selects the normal level of Brightness and Contrast.

PICTURE 2 (DYNAMIC)
For watching in brighter (daylight) environments. This menu selects a higher level of Brightness and Contrast.

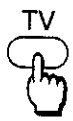
PICTURE 3 (MILD)
For watching in a dark room. This menu selects reduced levels of Brightness and Contrast.

Feature Menu Operation (Picture)



Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

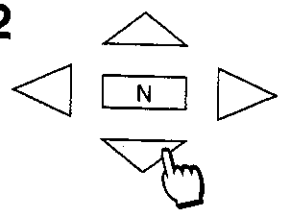
1



Push the "TV FEATURE MENU" Button.

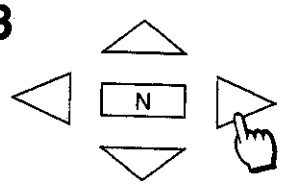
Push again to cancel.

2



Select the Feature you wish to change (Picture) by using the cursor Up "△" or Down " ▽ " Button.

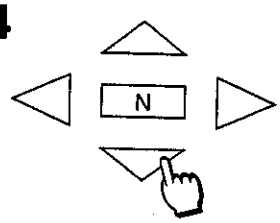
3



Push the cursor Left "◁" or Right " ▷ " Button.

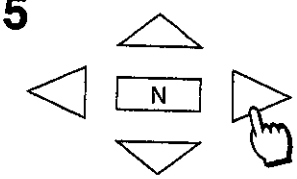
Arrow is at the NO position
→ Not Active
Arrow is at the YES position
→ NEXT Menu

4



Select the Function you wish to change by pushing the cursor Up "△" or Down " ▽ " Button.

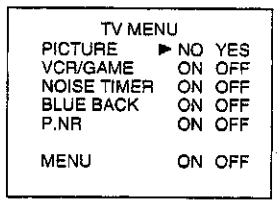
5



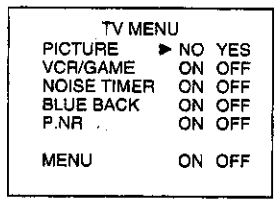
By pushing the cursor Left "◁" or Right " ▷ " Button, you can select the desired level of the function you have selected.

Helpful Hint

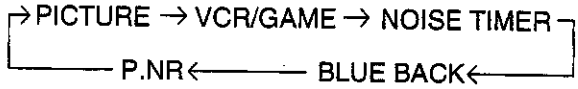
By pushing the Normal "N" Button on the Remote Control while the Picture menu is displayed, the selected menu will be changed to the Normal Mode.
Normalisation will not occur if the menu is not displayed when the "N" Button is pushed.

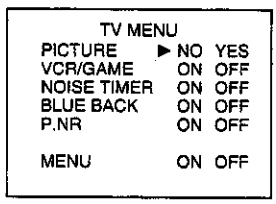


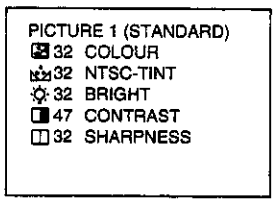
The "MENU" screen will appear.
You can change/select the condition of each item on the Menu.



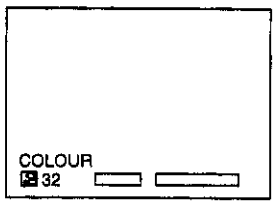
The background colour of the selected Feature will change to Black. You can select the desired Feature.
The Feature Menu will change as follows;



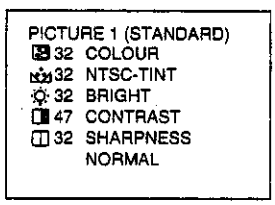




Note:
Even if the TV is not set to "NTSC" mode, "NTSC-TINT" will be displayed and level adjustment of the on screen display is possible.
However this has no effect on the picture.



e.g. Colour adjustment.

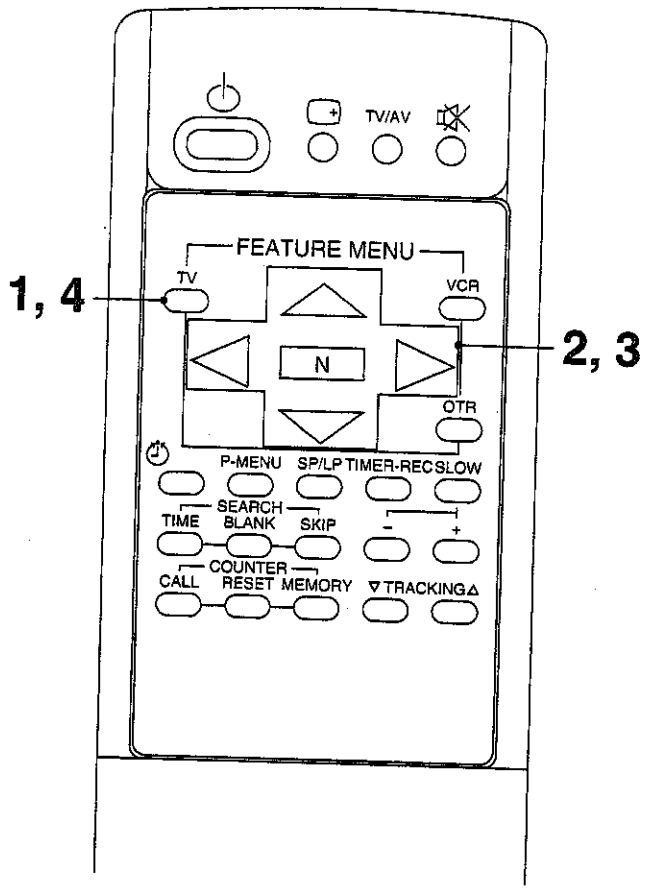


The Normal mode is the factory preset condition. Returning to this original condition is called "Normalisation".

e.g. Normalised levels for Picture Menu 1.

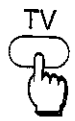
Continued on the next page. ➡

Feature Menu Operation (VCR/GAME, NOISE TIMER and BLUE BACK)



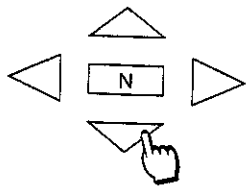
Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

1



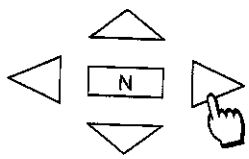
Push the "TV FEATURE MENU" Button.

2



Select the Feature you wish to change (VCR/GAME, NOISE TIMER, BLUE BACK) by using the cursor Up "△" or Down " ▽ " Button.

3



Push the cursor Left "◁" or Right " ▷ " Button.
Arrow is at the OFF position
→ Not Active
Arrow is at the ON position
→ Active

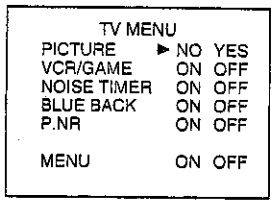
VCR/GAME Mode
Reproduction of irregular signals, such as certain TV games and rental video tapes, may be improved.

NOISE TIMER Mode
If the set is not switched off when the TV station stops broadcasting, it will automatically go to Stand-by Mode after 5 minutes.
Note:
This function will not operate when the Television receiver is in AV Mode.

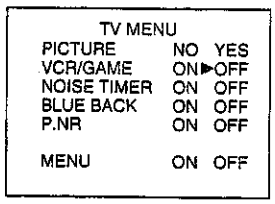
BLUE BACK Mode
When no picture Signal is input, or the Signal is weak, the screen reverts to a blue background colour.
Disable this Feature to continue watching very weak signals.

4

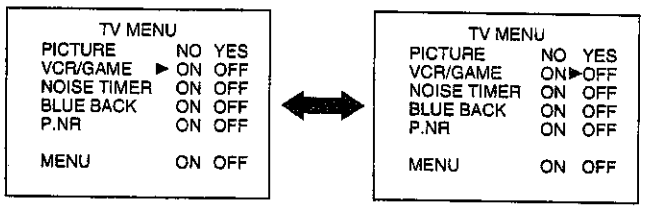
Push the "TV FEATURE MENU" button again, or select MENU OFF to cancel the Feature Menu, and return to normal viewing.



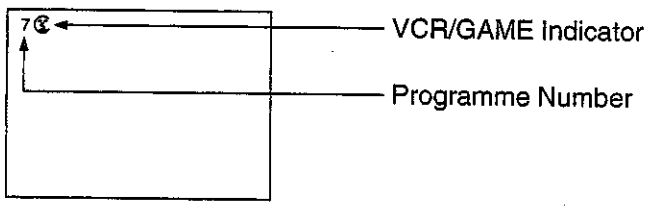
The "TV FEATURE MENU" screen will appear.
You can change/select the condition of each item on the Menu.



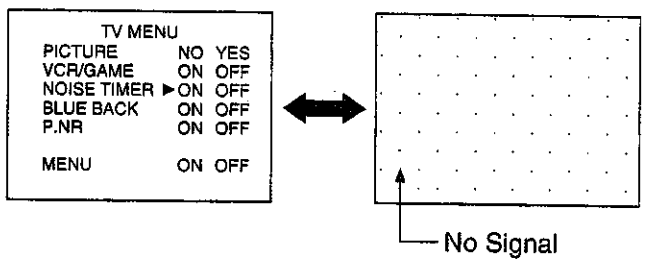
The background colour of the selected Feature will change to Black.



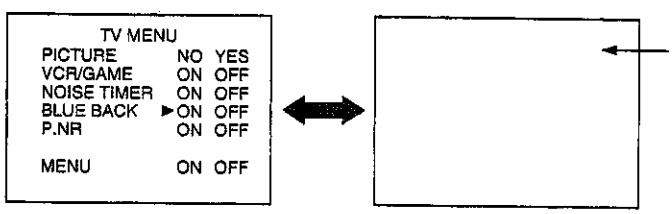
e.g. VCR/GAME Feature Selection



This Feature is only effective when the RF IN Terminal is used, i.e. does not operate for signals input from the AV terminals.



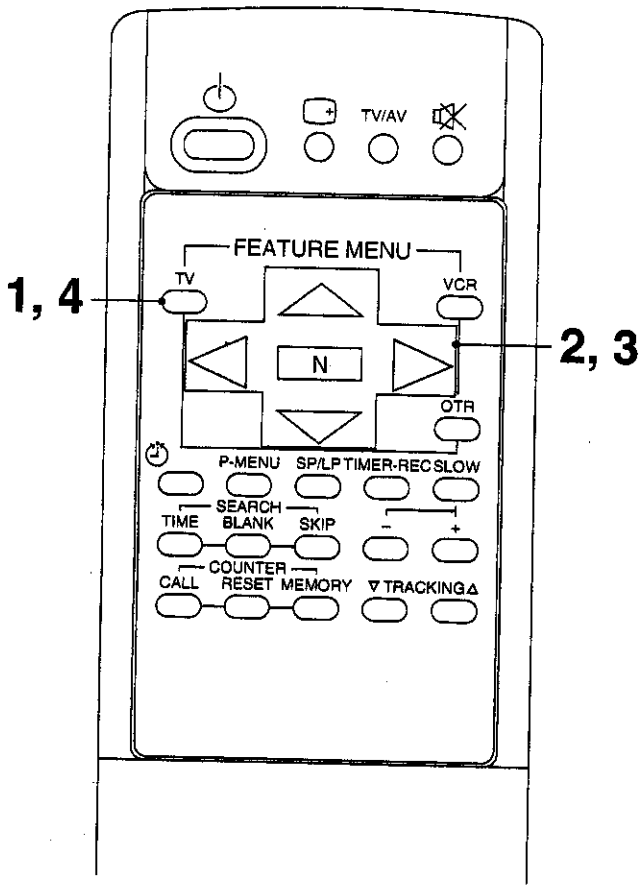
➡ To STAND-BY after 5 minutes.



Blue if no input picture signal or input signal is weak.

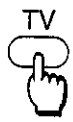
Note:
If BLUE BACK Mode is set on while a VCR signal is being viewed, selecting CUE or REVIEW may cause the screen to revert to the blue background colour. Disable this feature to view correctly.

Feature Menu Operation (P. NR)



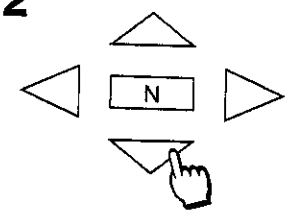
Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

1



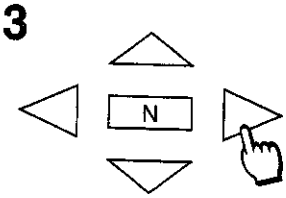
Push the "TV FEATURE MENU" Button.

2



Select the P. NR Feature by using the cursor Up "△" or Down " ▽ " Buttons.

3



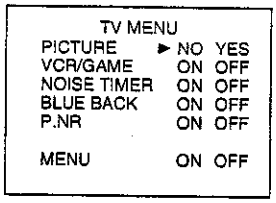
Push the cursor Left "◁" or Right " ▷ " Button.

Arrow is at the OFF position
→ Not Active
Arrow is at the ON position
→ Active

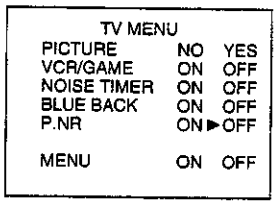
P. NR Mode
The Picture Noise Reduction System is designed to reduce picture noise during poor quality reception conditions.

4

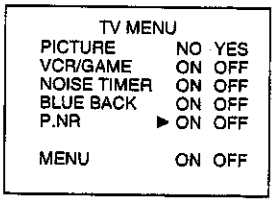
Push the "TV FEATURE MENU" button again, or select MENU OFF to cancel the Feature Menu, and return to normal viewing.

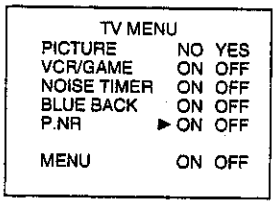


The "TV FEATURE MENU" screen will appear.
You can change/select the condition of each item on the Menu.

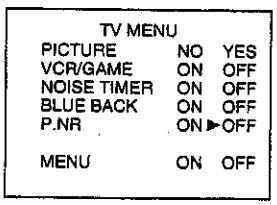


The background colour of the selected Feature will change to Black.



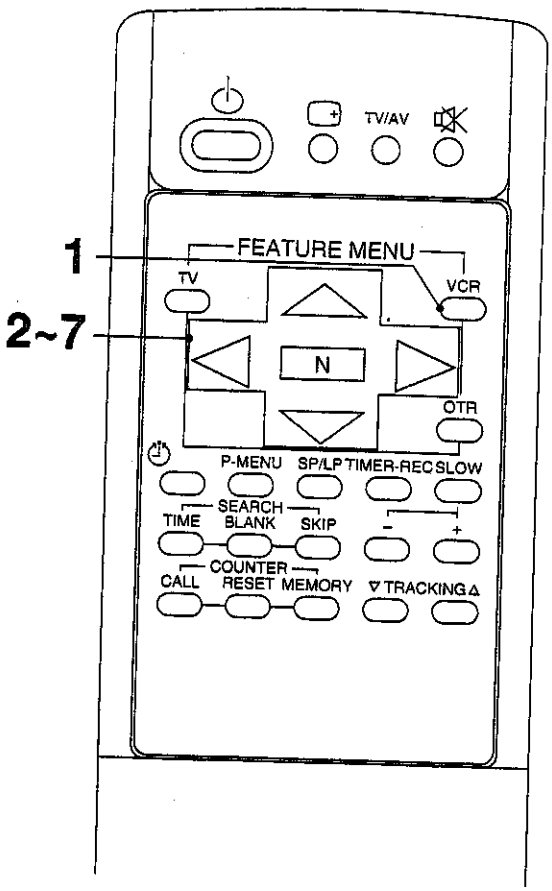


When the Picture Noise Reduction System is ON, picture noise will be softened and less sharp.



When the Picture Noise Reduction System is OFF, the picture will be sharper.

Note:
When the "VCR" button is pushed after your Unit is first switched on from NEW, it automatically enters this clock setting Mode.



Note:
The illustration shows the buttons inside the Remote Control door.
For the method for opening the door, refer to page 14.

1

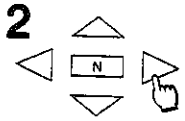
Push the "VCR Feature Menu" Button.
Set the cursor to CLOCK by using the cursor buttons "△" and "▽" and then select "YES" by using the cursor buttons "◁" and "▷".
Push the button once again to cancel.

Note:
Start from Step 2 when you first switched the main power (i.e. from "New").

```
VCR MENU
CLOCK      ► NO  YES
PROGRAMME  NO  YES

MENU       ► ON  OFF
```

2

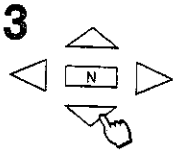


Set the "YEAR" by using the cursor buttons "◁" and "▷".
▷ ----- Raise the figure.
◁ ----- Lower the figure.

```
CLOCK
YEAR   1992
MONTH  1
DATE   1 (WED)
TIME   --:--

MENU   ►ON OFF
```

3

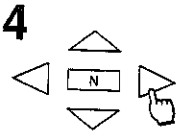


Set the cursor to "MONTH" by using the cursor buttons "△" and "▽".

```
CLOCK
YEAR   1992
MONTH  1
DATE   1 (WED)
TIME   --:--

MENU   ►ON OFF
```

4

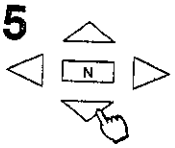


Set the "MONTH" by using the cursor buttons "◁" and "▷".
▷ -----Raise the figure.
◁ -----Lower the figure.

```
CLOCK
YEAR   1992
MONTH  12
DATE   1 (TUE)
TIME   --:--

MENU   ►ON OFF
```

5

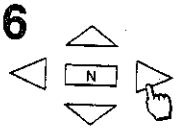


Set the cursor to "DATE" by using the cursor buttons "△" and "▽".

```
CLOCK
YEAR   1992
MONTH  12
DATE   1 (TUE)
TIME   --:--

MENU   ►ON OFF
```

6

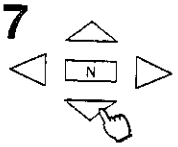


Set the "DATE" by using the cursor buttons "◁" and "▷".
▷ -----Raise the figure.
◁ -----Lower the figure.

```
CLOCK
YEAR   1992
MONTH  12
DATE   31 (THU)
TIME   --:--

MENU   ►ON OFF
```

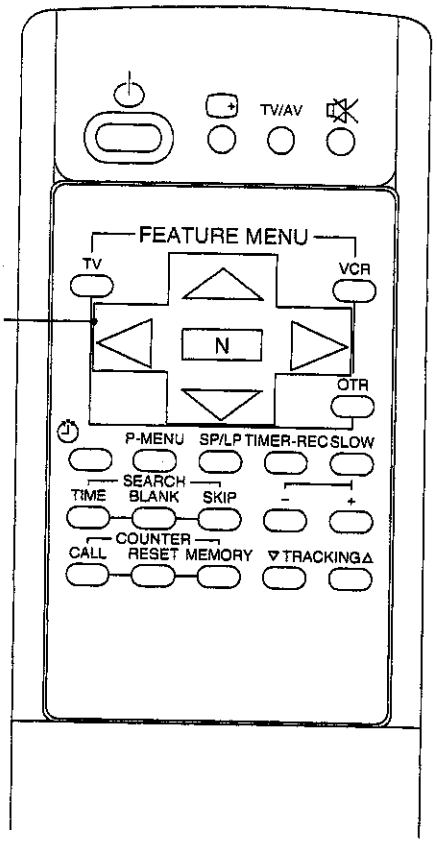
7



Set the cursor to "TIME" by using the cursor buttons "△" and "▽".

```
CLOCK
YEAR   1992
MONTH  12
DATE   31 (THU)
TIME   --:--

MENU   ►ON OFF
```



8 Set the "HOUR" by using the cursor buttons "◁" and "▷".
▷ ----- Raise the figure.
◁ ----- Lower the figure.

CLOCK	
YEAR	1992
MONTH	12
DATE	31 (THU)
TIME	19 : – –
MENU	►ON OFF

9 Change to adjustment of the "MINUTE" by using the cursor buttons "△" and " ▽ ".

CLOCK	
YEAR	1992
MONTH	12
DATE	31 (THU)
TIME	19 : – –
MENU	►ON OFF

10 Set the "MINUTE" by using the cursor buttons "◁" and "▷".
▷ ----- Raise the figure.
◁ ----- Lower the figure.

CLOCK	
YEAR	1992
MONTH	12
DATE	31 (THU)
TIME	19 : 00
MENU	►ON OFF

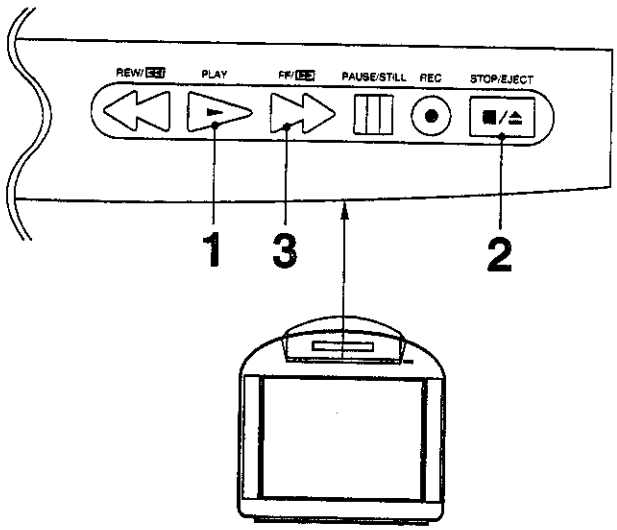
11 Set the cursor to "MENU" by using the cursor buttons "△" and " ▽ ".

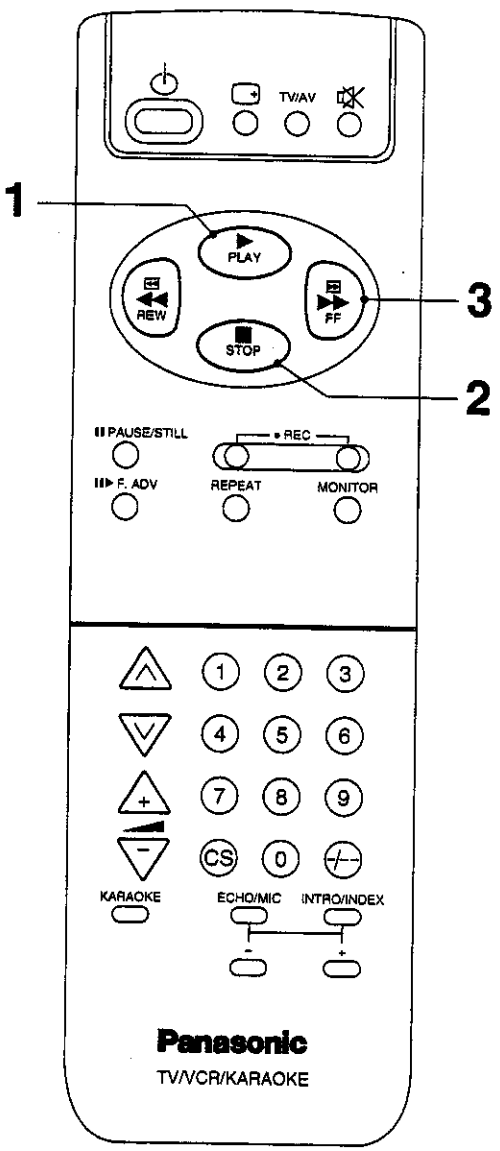
CLOCK	
YEAR	1992
MONTH	12
DATE	31 (THU)
TIME	19 : 00
MENU	►ON OFF

12 Select "OFF" by using the cursor buttons "◁" and "▷". The clock starts and the TV picture re-appears.

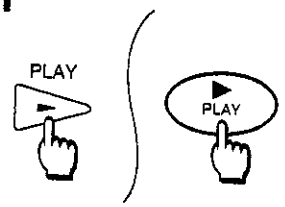
Note:
The illustration shows the buttons inside the Remote Control door.
For the method for opening the door, refer to page 14.

Note:
- The Unit will accept dates from 1990 through to December 31, 2089.
- Designation of a date outside these limits, or not selecting even one of the time settings, will cause the Unit to not accept your settings, and not set the clock.

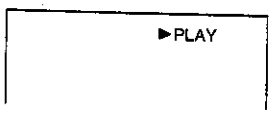




1

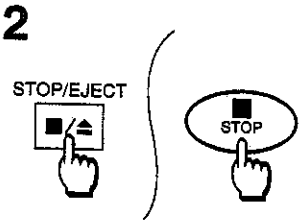


PLAY Button
Push this button to playback the tape.

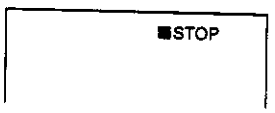


Note:
Whenever playing a tape, the mode is automatically switched over to the "VIDEO" mode even if the TV is set to the "TV" mode.

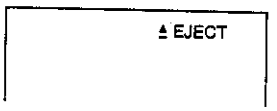
2



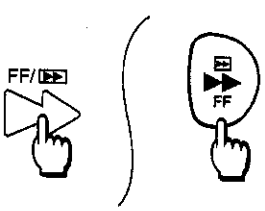
STOP/EJECT Button
Push the "STOP" Button to stop the tape.



Push the STOP/EJECT button to eject the tape.

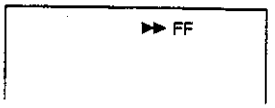


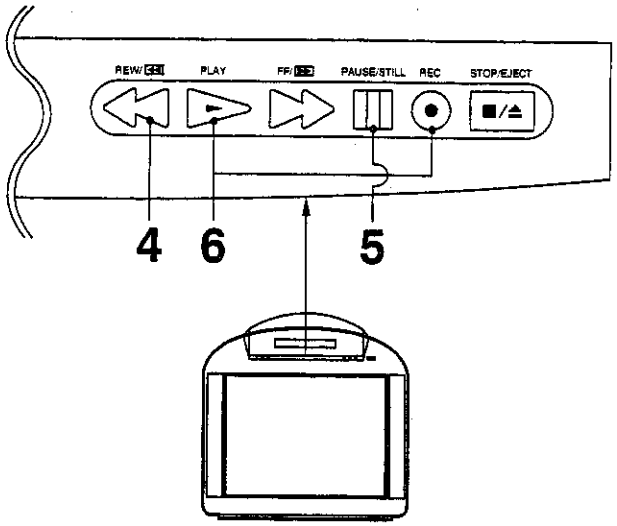
3

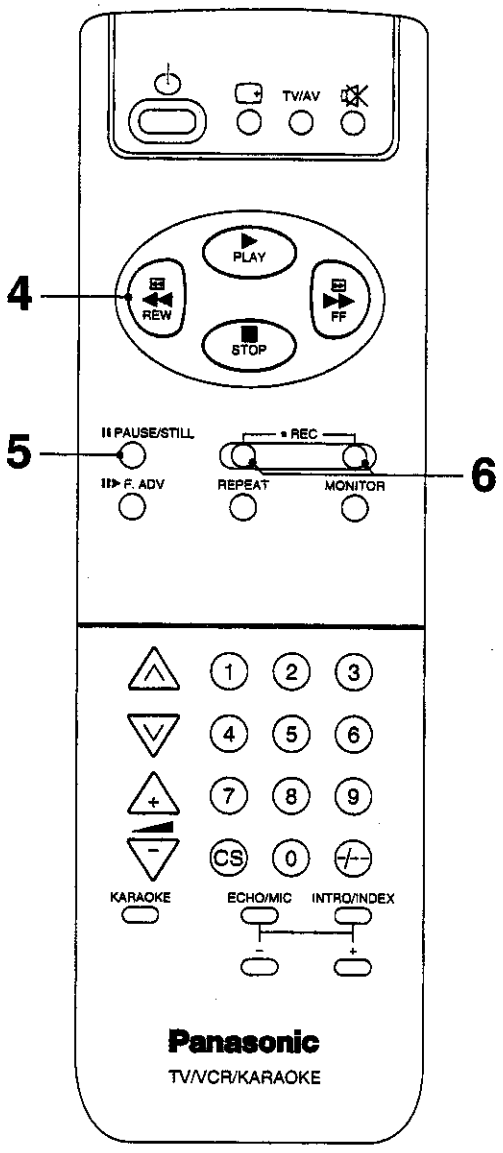


FF (Fast Forward)/Cue Button
Push this button to fast forward the tape.

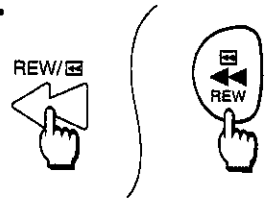
During playback mode, holding this button down will allow you to view the picture in the forward direction rapidly.







4



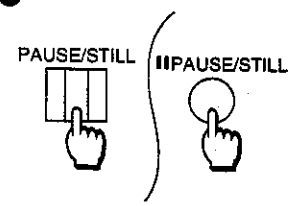
REW (Rewind)/Review Button
Push this button to rewind the tape.

During playback mode, holding this button down will allow you to view the picture in reverse rapidly.

◀◀ REW

Note:
When the power is switched off during rewinding, the power of the TV is shut off immediately, but the power of the VCR section is shut off only after completion of rewinding (REWIND SHUT OFF).

5



PAUSE/STILL Button
Push to stop the tape temporarily during playback and recording.

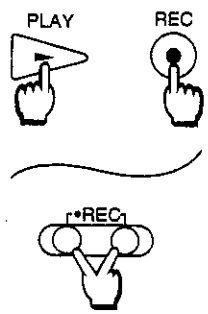
During playback: Still picture.

During recording: To interrupt recording

II PAUSE

Note:
When Pause is continued for more than 5 minutes, it is automatically cancelled for protection of the tape.
When Still is continued for more than 3 minutes, it is automatically cancelled for protection of the tape.

6

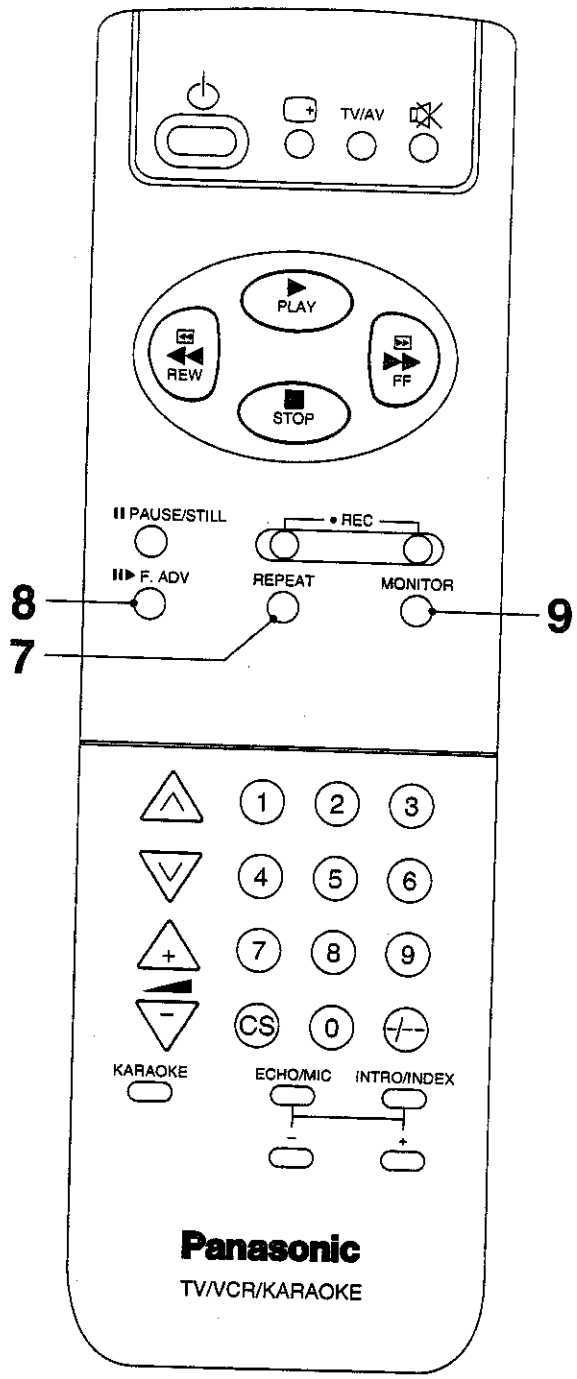


REC (Record) Buttons
Recording is started by pushing these 2 buttons at the same time.

● REC

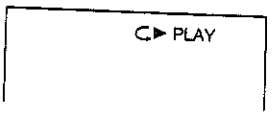
Note:
When a tape with erasure prevention tab is inserted, the tape is automatically ejected. Insert a tape with the erasure prevention tab still in place.

Continued on the next page. ➡



7 REPEAT

REPEAT Button
When the REPEAT button is pushed during playback, the tape is played back repeatedly from the start to the end of the recorded content.



Note:
When either the REPEAT, PAUSE, FAST FORWARD, REWIND or STILL buttons are pushed during repeat playback, repeat playback is cancelled. The operation mode changes to that determined by the button pushed.

8 II▶ F. ADV

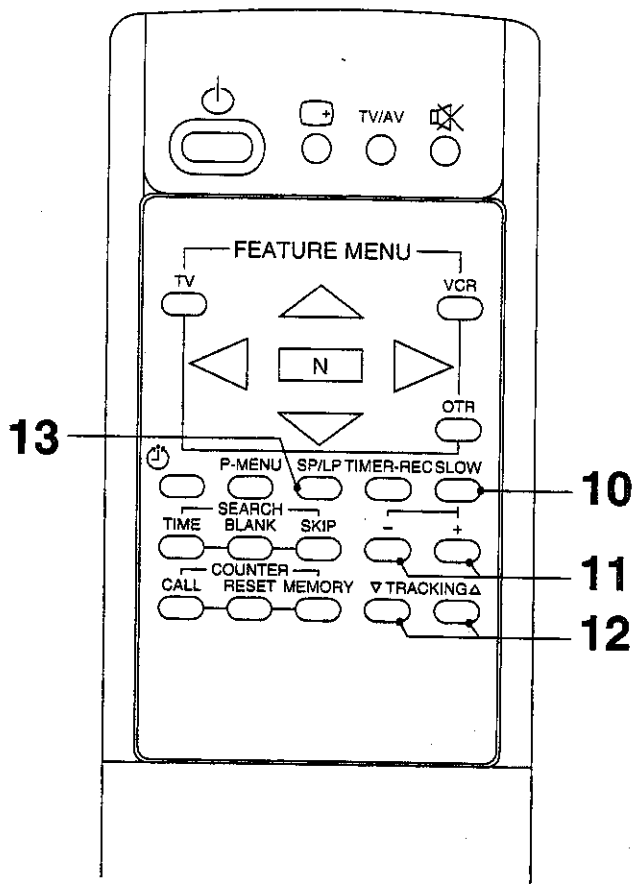
F. ADV Button (Frame Advance)
Push this button during Still Mode. Each time you push this button, the Still picture is advanced, frame by frame.

9 MONITOR

MONITOR Button
When the MONITOR button is pushed during playback of a tape, you can watch the TV picture for a moment while the button is held down.

Use this function to briefly check or monitor the TV broadcast picture while playing and viewing a tape.

Note:
Holding the monitor button in the pushed condition for extended periods will result in shortened Remote Control battery life.



Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

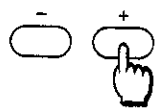
10

Slow Button
When the SLOW button is pushed during playback, playback continues at a slower speed.

When it is pushed during a Still picture, the picture is forwarded frame by frame. When the button is held down, continuous frame forwarding occurs.

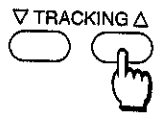
When Slow playback is continued for more than 3 minutes, it is automatically cancelled for protection of the tape.

11



"+" --- When this button is held down the speed of Slow playback will be increased.
"–" --- When this is held down the speed will be decreased.

12



TRACKING Button
When the playback picture is not clear, push the TRACKING buttons "–" and "+" to adjust for best picture.

13

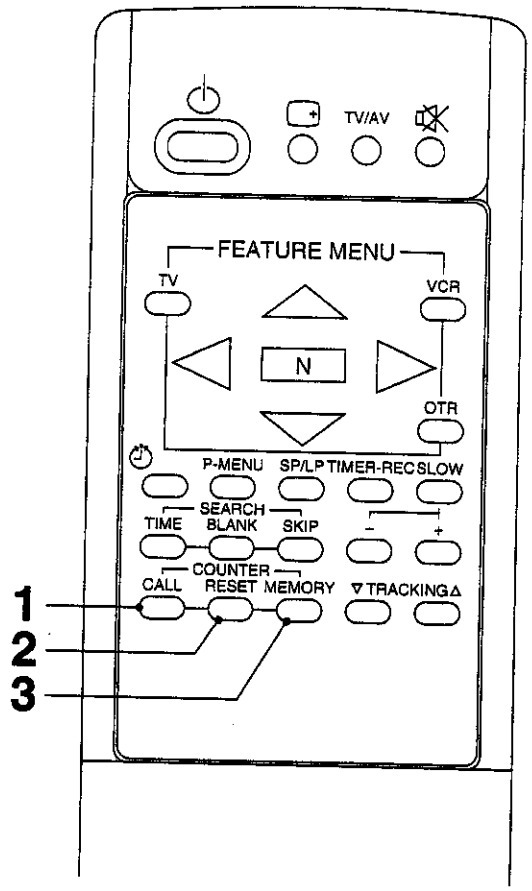
SP/LP Button
The recording time can be altered as follows.
SP ----Standard Mode
LP ----Twofold Mode (PAL)
Threefold Mode (NTSC)

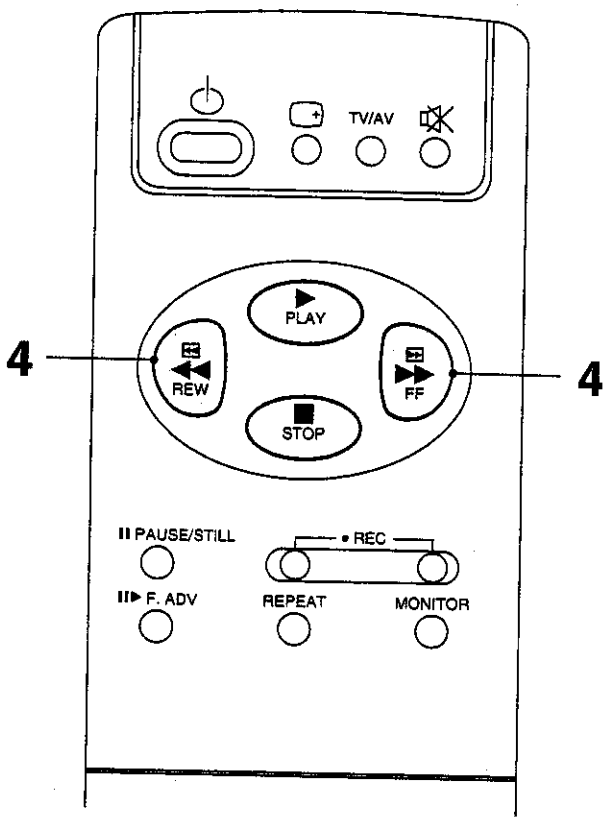
Helpful Hint

SP (STANDARD PLAY) ---When recording a programme which you want to preserve, or when recording a programme for editing in the future, etc.

LP (LONG PLAY) ----------When recording a long duration programme on a tape, etc.

Note:
Picture and tone quality are inferior to those of tape recorded in Standard Play (SP) Mode.





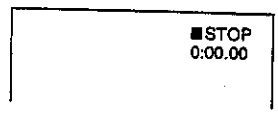
Using the Tape Position Counter.

1

Displaying the Tape Counter.
Make sure that a tape is inserted. The playback time after insertion of the tape is shown after pushing the CALL button. Push the button once again to cancel.

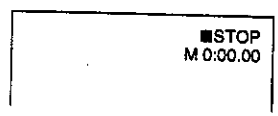
2

Resetting the Tape Counter.
Push the RESET button; the counter resets to "0:00.00".



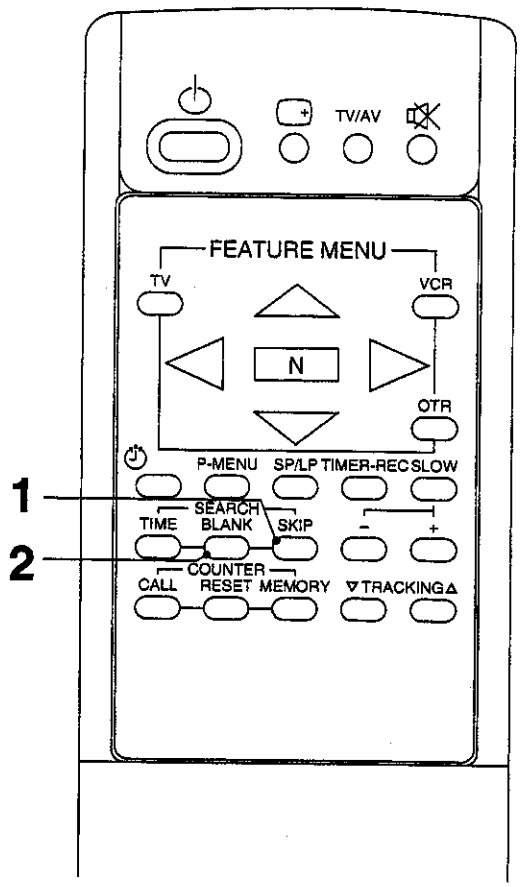
3

Making the VCR memorise this position.
Push the Memory button to memorise the RESET position. "M" appears on the screen to indicate such memory to you.



4

When either the FAST FORWARD or REWIND button is pushed, the tape automatically stops at "0:00.00", after such position has been memorised.3



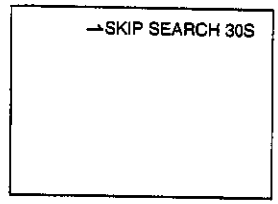
Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

Skip Search

Push the SKIP button to skip commercials etc. during playback.

1

The skip time can be selected by repeatedly pushing the SKIP button.
30 sec. (once) → 60 sec. (twice) → 90 sec. (three times) → 120 sec. (four times)



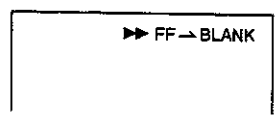
The tape returns to normal playback after advancing the selected skip time.

Blank Search

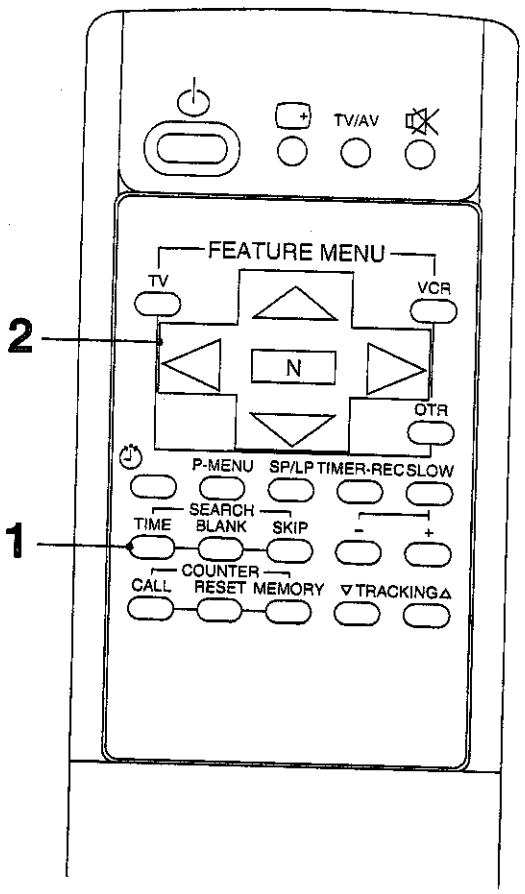
For urgent recording, you can search for an unused part of a tape by one-touch control.

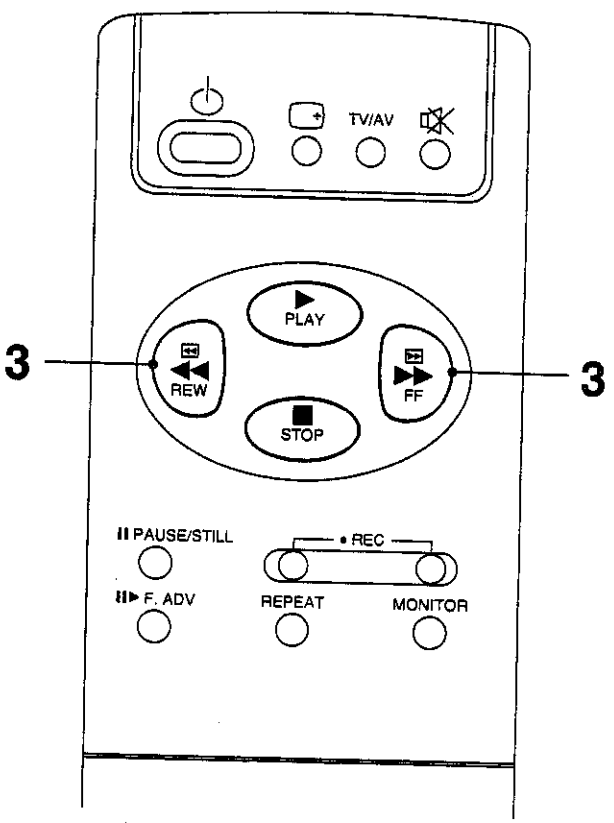
2

- Insert the video cassette tape concerned.
- Push the BLANK button.
  The VCR will search for an unused part of the tape automatically.



Note:
When more than one programme is recorded on a tape and there is more than 3 sec. of unrecorded tape between two such programmes, the tape will stop at that intermediate point.



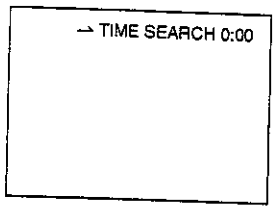


TIME SEARCH

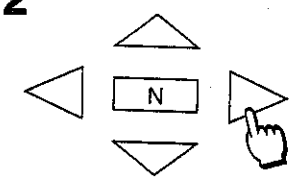
When the position of the recorded portion of a tape that you want to see is known, that point can be easily found after fast forward or rewinding.

1

Push the TIME button during either Stop Mode or Playback.



2



Input the amount of playback time between the current and the desired tape positions.

▷ -----Raise the figure.

◁ -----Lower the figure.

Setting range;

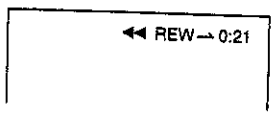
0:00~9:59

3

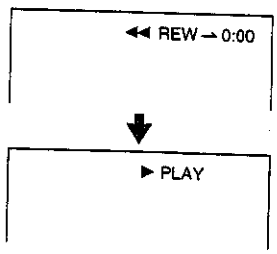
Decide which direction to make the tape advance, and use the Fast Forward or Rewind buttons accordingly.

<u>(Example) Rewinding:</u>

Push the REW button. Rewinding starts and the remaining time for time search is indicated.

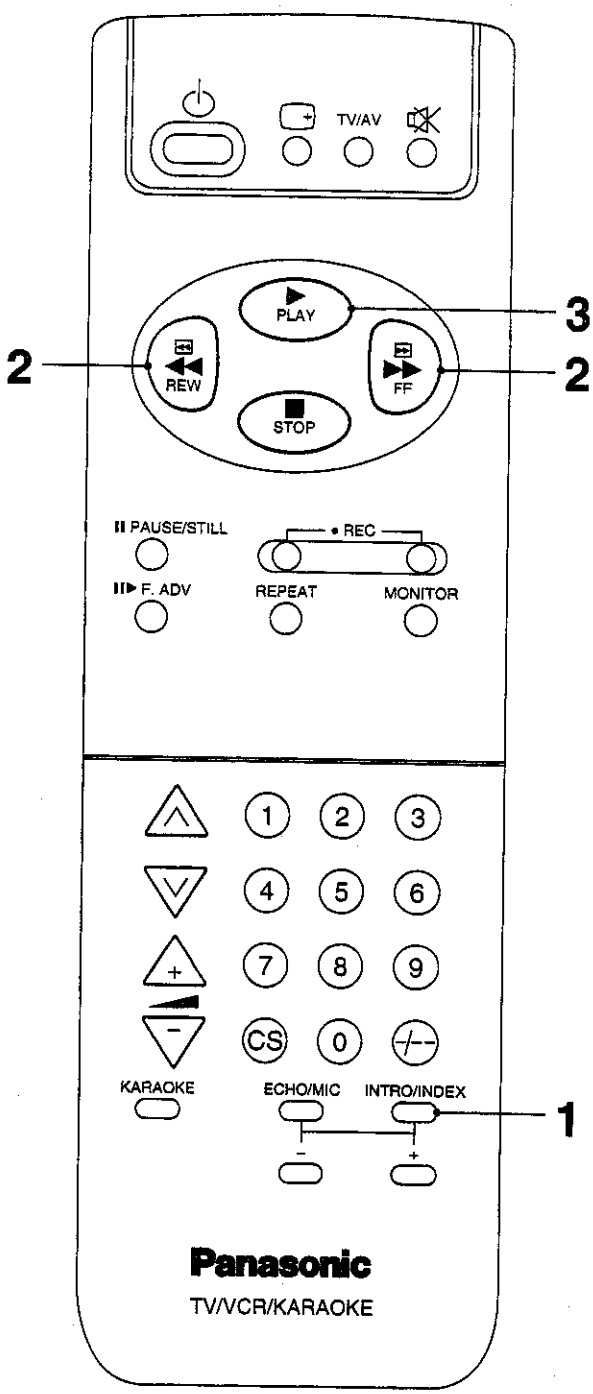


When the remaining time becomes "0:00", the Mode changes to Playback.



Note:

The counter stops at any portion of the tape where no programme is recorded. The time search does not include the time of such tape portions.



Auto Index Search Operation (When KARAOKE Mode is switched OFF.)

In INDEX SEARCH Mode, the first 10 seconds of each programme are played back, consecutively.

1 INTRO/INDEX

Push the INTRO/ INDEX Button.

→ INDEX SEARCH 0

2 FF / REW

Push the FF (Fast Forward) Button or REW (Rewind) Button, depending on which direction you wish to search in.

▶▶ FF → AUTO

3 PLAY

Press the PLAY button when your desired Programme is reached.

▶ PLAY

Auto Intro Search Operation (When KARAOKE Mode is switched ON.)

In INTRO SEARCH Mode, the first 10 seconds of each music piece are played back.

1 INTRO/INDEX

Push the "INTRO/ INDEX" Button.

→ INTRO SEARCH 0

2 FF / REW

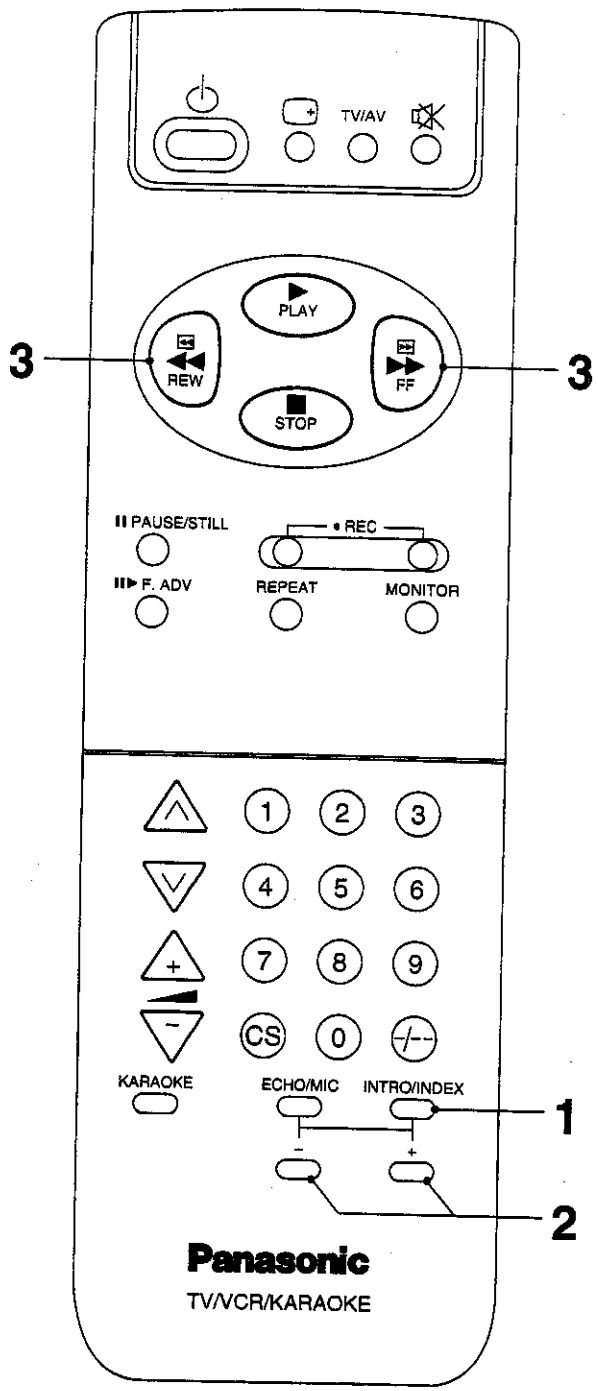
Push the "FF (Fast Forward)" Button or "REW (Rewind)" Button.

▶▶ FF → AUTO

3 PLAY

When a programme number is selected, the tape is searched automatically to access the beginning of that programme.

▶ PLAY



Index Search Operation (When KARAOKE Mode is switched OFF.)

When a Programme Number is selected, the tape is searched automatically to access the beginning of that Programme. Insert a recorded cassette tape with index signals.

1 INTRO/INDEX

Push the INTRO/INDEX Button.

→ INDEX SEARCH 0

2 – +

Select the Programme Number to Search for, by pushing the "+" button repeatedly.
Setting range;
1~20

→ INDEX SEARCH 5

3 REW / FF

Decide the direction to search in and use either the "REW (Rewind)" or "FF (Fast Forward)" Buttons accordingly.

▶▶ FF→5

Intro Search Operation (When KARAOKE Mode is switched ON.)

The tape is searched automatically for blanks (no sound) of more than 6 seconds duration to enable access to the beginning of a desired tune.

1 INTRO/INDEX

Push the "INTRO/INDEX" Button

→ INTRO SEARCH 0

2 – +

Designate the order of music by pushing the "+" or "–" button.
Setting range;
1~20

→ INTRO SEARCH 5

3 REW / FF

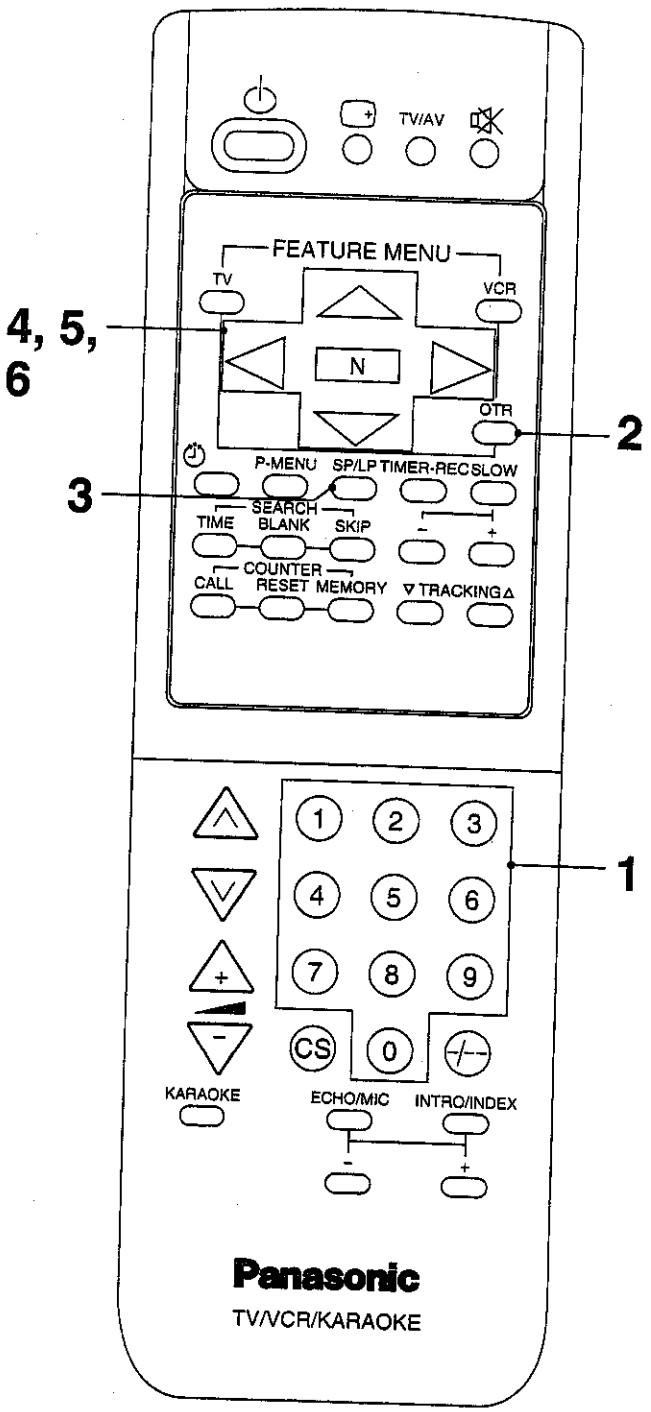
Decide the search direction by using either the "REW (Rewind)" or "FF (Fast Forward)" Buttons.
(Example)
FAST FORWARD

▶▶ FF→5

Recording of Index Signals
Index signals will be recorded automatically in the following cases:
- At the tape position at which the Record Button is pushed to start recording.
- At the tape position at which a Timer Recording is started.

In the following cases, the Intro Search function may not work correctly:
- When using a tape recorded in the LP mode. (It is recommended that you use tapes recorded in the SP mode.)
- When some loud sounds are recorded between programmes or Karaoke tracks or at the beginning of programmes.
- When the search for a Programme or Karaoke track is started from close to the beginning of the tape or close to an interval between programmes.
- When a Programme or Karaoke track is very short (less than 40 seconds).
- When using tapes with poor quality, for example tapes that have been dubbed repeatedly.
- When there are passages with very weak sound or passages without any sound in a Programme or Karaoke track.
- When the intervals between Programmes or Karaoke tracks are shorter than 6 seconds.
- When using tapes recorded with the Fade-in or Fade-out recording function.
- When some narration has been recorded at the beginning of the Programmes or Karaoke tracks.
- When using a tape recorded in the NTSC system.

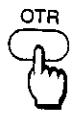
The One-Touch Timer Recording function is useful when you want to record a programme today or the day after. You can easily preset the timer recording by setting the start time and recording time (in 30 minute increments).



1

Select the desired channel.
(Example);
When receiving Channel 2.
You can also select the desired channel by pushing the channel Up "∧" and Down "∨" Button or the CS (Channel Select) Button.

2

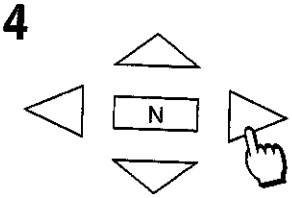


Push the OTR (One-Touch Timer Recording) button.

3

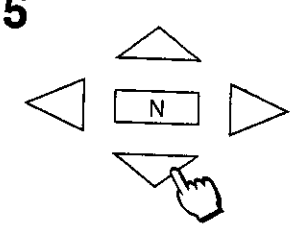
Select the desired record Mode.
Use the SP/LP Button.
SP-------Standard mode
LP-------Twofold mode (PAL)
Threefold mode (NTSC)

4



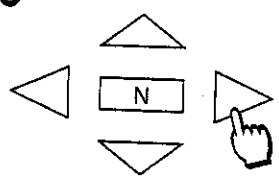
Set the start time.
You can select the desired start time in 30 minute increments from the current time.
Note:
Set "START NOW" Mode when you want to record at once.

5



Set the cursor to REC ⏺ by using the cursor buttons "△" and "▽".

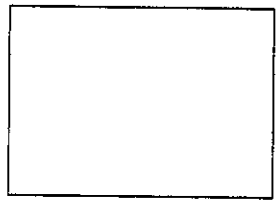
6

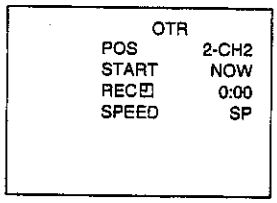


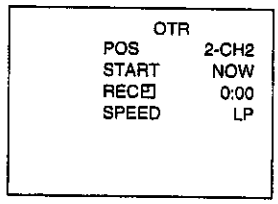
Set the recording time.
You can select the recording time in 30 minute increments at every push of the cursor buttons "◁" and "▷".

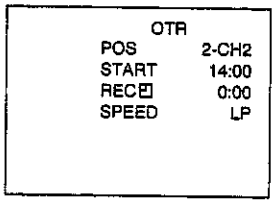
→ 0:00 ↔ 0:30 ↔ 1:00 ↔ 1:30 ↔ 2:00 ←
→ END (TAPE END) ↔ 4:00 ↔ 3:30 ←

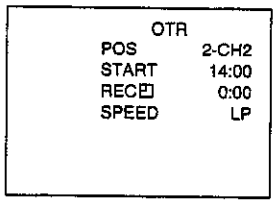
Recording will now start when the start time arrives.

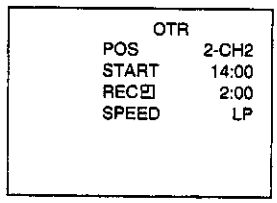






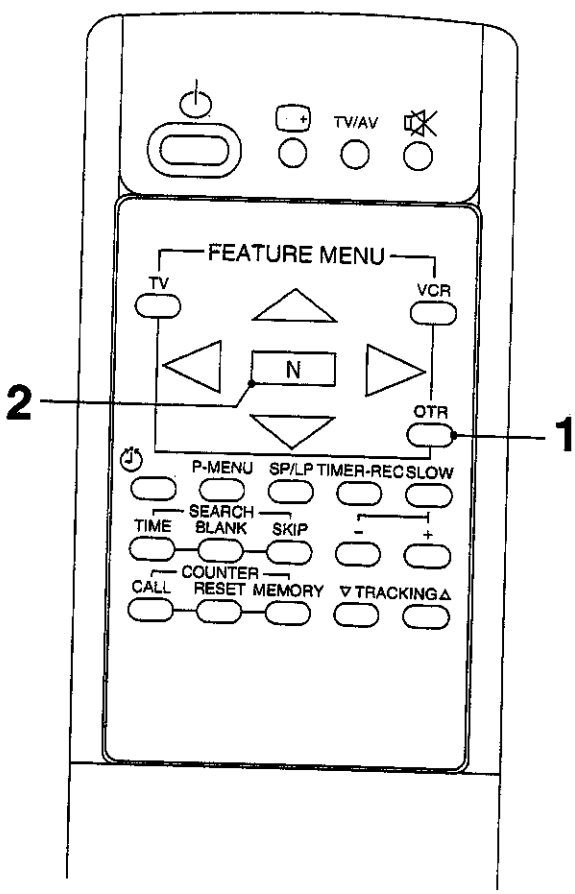






Note:

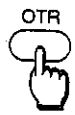
- When the current time has not previously been preset, the Menu for "Setting the clock" is displayed. First, set the clock while referring to "How to set the clock" on page 48 and 49.
- When a tape with erasure prevention tab removed is inserted and you set the "OTR", the tape is automatically ejected. Insert a tape with the erasure prevention tab still in place.
- You can not select One-Touch Timer Recording while the timer is preset. Cancel the timer first.
- Picture recording is not cancelled by pushing the STOP button.
- When the recording time is set to END (tape end), the remaining time is not indicated.
- One Touch Timer Recording can not be performed when the Karaoke Mode is ON. Turn the Karaoke Mode OFF.



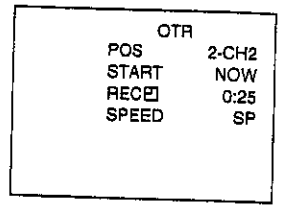
Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

When you want to check the remaining OTR recording time.

1



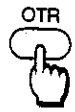
The remaining time is indicated by pushing the "OTR" Button.



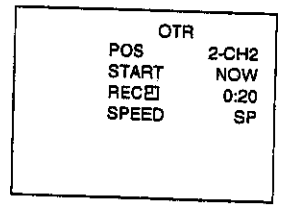
When you want to extend the recording time, set the cursor to REC ◰ by pushing the cursor button " ▽ " and then change the recording time by pushing the cursor buttons " ◁ " and " ▷ ".

When you want to stop in the middle of recording

1



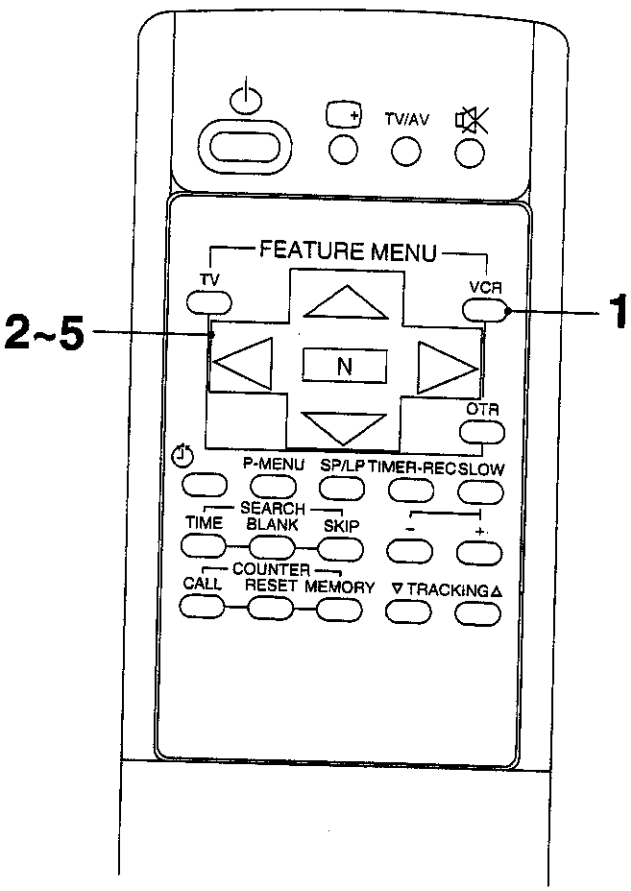
Show the remaining time by pushing the "OTR" Button.



2

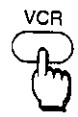
Set the recording time to "0:00" by pushing the "N" Button. Recording will stop immediately.

Programme Timer Recording is a function which enables you to record TV programmes, or from the external input up to 6 programmes, on optional days, everyday, or every week, for up to a month in advance.

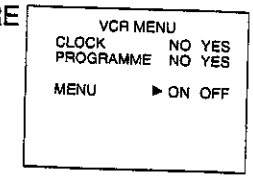


Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

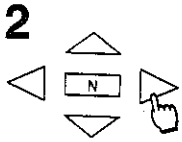
1



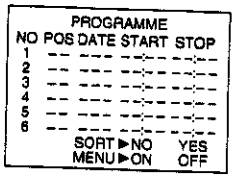
Push the "VCR FEATURE MENU" Button. Select Programme "YES" by using the cursor buttons "◁" and "▷". Push the button once again to cancel, by selecting programme "NO".



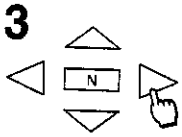
2



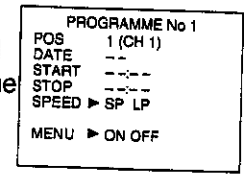
Select the programme number by using the cursor button "△" and "▽ ". Programme Timer Recording is executed by using the cursor button "◁" and "▷".



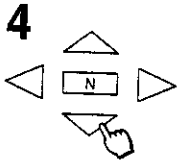
3



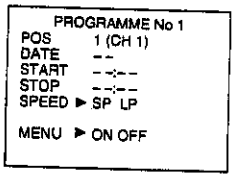
The channel to be reserved can be selected by repeated pushing of the cursor buttons "◁" and "▷".



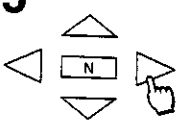
4



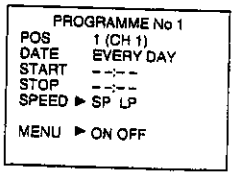
Set the cursor to "DATE" by using the cursor button "▽ ". The present day is displayed.



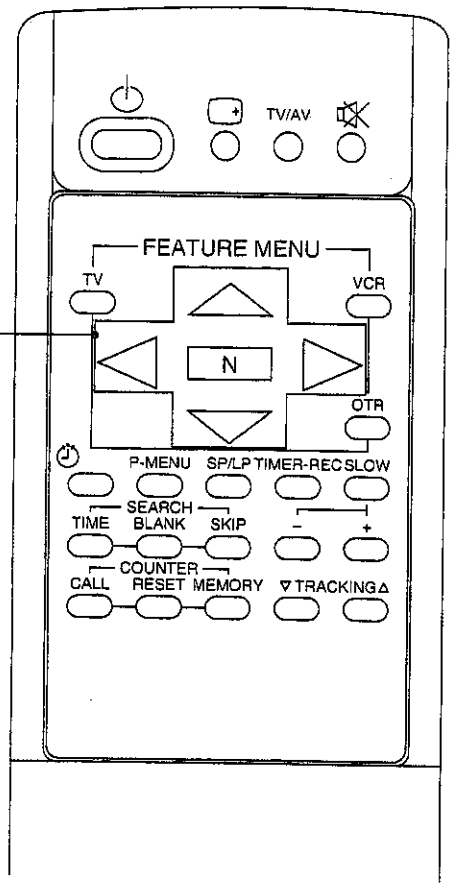
5



The recording date can be selected by repeated pushing of the cursor buttons "◁" and "▷". The recording date can be selected, from today, yesterday of the next month, everyday, Monday to Saturday, Monday to Friday, every week, or from Sunday to Saturday.

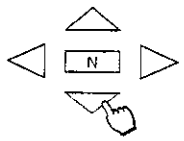


6~11



Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

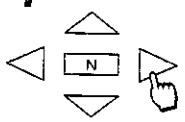
6



Set the cursor to "HOUR" of the start time by using the cursor button " ▽ ". The present time is displayed.

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START --:--
STOP --:--
SPEED ▶ SP LP
MENU ▶ ON OFF

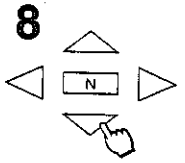
7



The start time can be selected by repeated pushing of the cursor buttons "◁" and "▷".
▷ -----Raise the figure.
◁ -----Lower the figure.

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:--
STOP --:--
SPEED ▶ SP LP
MENU ▶ ON OFF

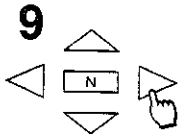
8



Set the cursor to "MINUTE" of the start time by pushing the cursor button " ▽ ".

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:--
STOP --:--
SPEED ▶ SP LP
MENU ▶ ON OFF

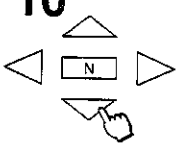
9



The "MINUTE" of the start time can be selected by repeated pushing of the cursor button " ◁ " and " ▷ ".
▷ -----Raise the figure.
◁ -----Lower the figure.

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP --:--
SPEED ▶ SP LP
MENU ▶ ON OFF

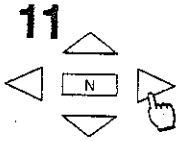
10



Set the cursor to "HOUR" of the end time by pushing the cursor button " ▽ ".

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP --:--
SPEED ▶ SP LP
MENU ▶ ON OFF

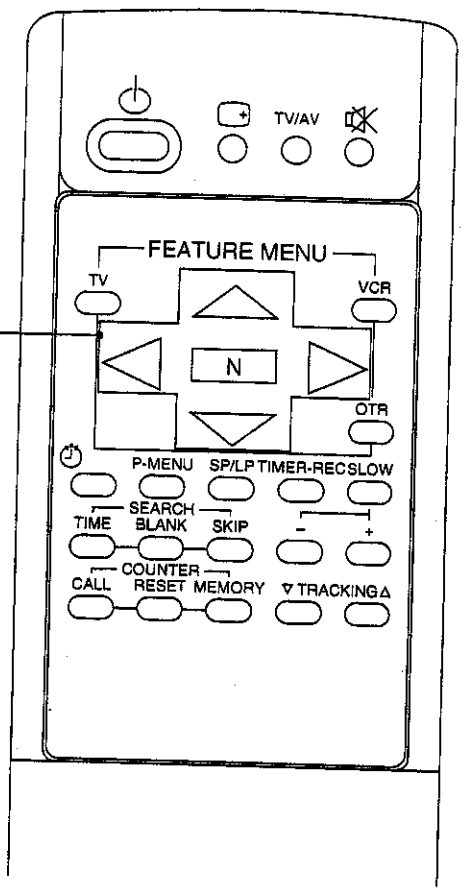
11



The "HOUR" of the end time can be selected by repeatedly pushing of the cursor buttons " ◁ " and " ▷ ".
▷ -----Raise the figure.
◁ -----Lower the figure.

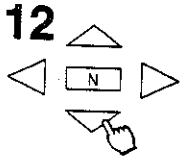
PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP 21:--
SPEED ▶ SP LP
MENU ▶ ON OFF

Continued on the next page. ➡



Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

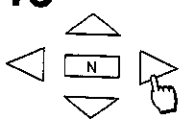
12



Set the cursor to "MINUTE" of the end time by pushing the cursor button " ▽ ".

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP 21:--
SPEED ▶ SP LP
MENU ▶ ON OFF

13

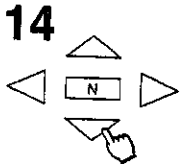


The "MINUTE" of the end time can be selected by repeated pushing of the cursor buttons " ◁ " and " ▷ ".

▷ -----Raise the figure.
◁ -----Lower the figure.

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP 21:30
SPEED ▶ SP LP
MENU ▶ ON OFF

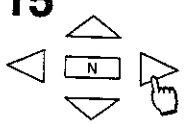
14



Set the cursor to SPEED by using the cursor button " ▽ ".

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP 21:30
SPEED ▶ SP LP
MENU ▶ ON OFF

15

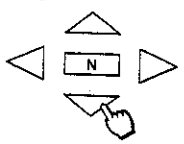


The recording time of the tape can be selected by repeated pushing of the cursor buttons " ◁ " and " ▷ ".

SP ----Standard mode
LP ----Twofold mode (PAL)
Threefold mode (NTSC)

PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP 21:30
SPEED SP▶LP
MENU ▶ ON OFF

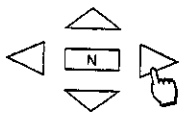
16



Set the cursor to "MENU" by using the cursor button " ▽ ".

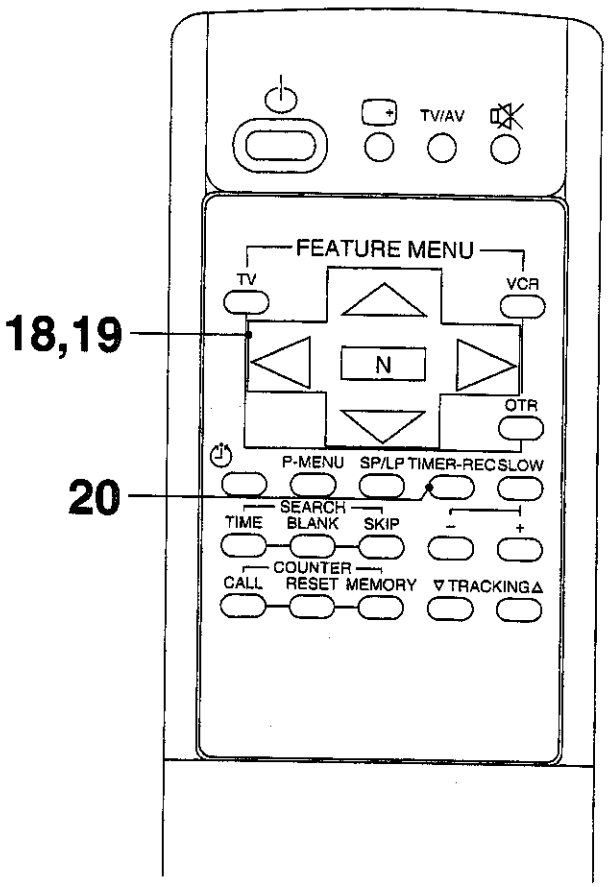
PROGRAMME No 1
POS 1 (CH 1)
DATE EVERY DAY
START 19:30
STOP 21:30
SPEED SP▶LP
MENU ▶ ON OFF

17



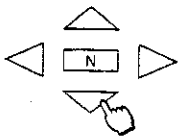
Select "MENU OFF" by using the cursor buttons " ◁ " and " ▷ ".

PROGRAMME
NO POS DATE START STOP
1 1 DAY 19:30 21:30
2 --- --- --:-- --:--
3 --- --- --:-- --:--
4 --- --- --:-- --:--
5 --- --- --:-- --:--
6 --- --- --:-- --:--
SORT ▶ NO YES
MENU ▶ ON OFF

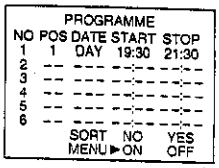


Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

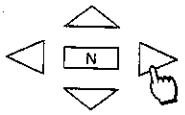
18



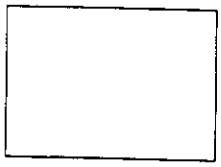
Set the cursor to "MENU" by pushing the cursor button "▽ ".



19



Select "MENU OFF" by using the cursor buttons "◁" and "▷".



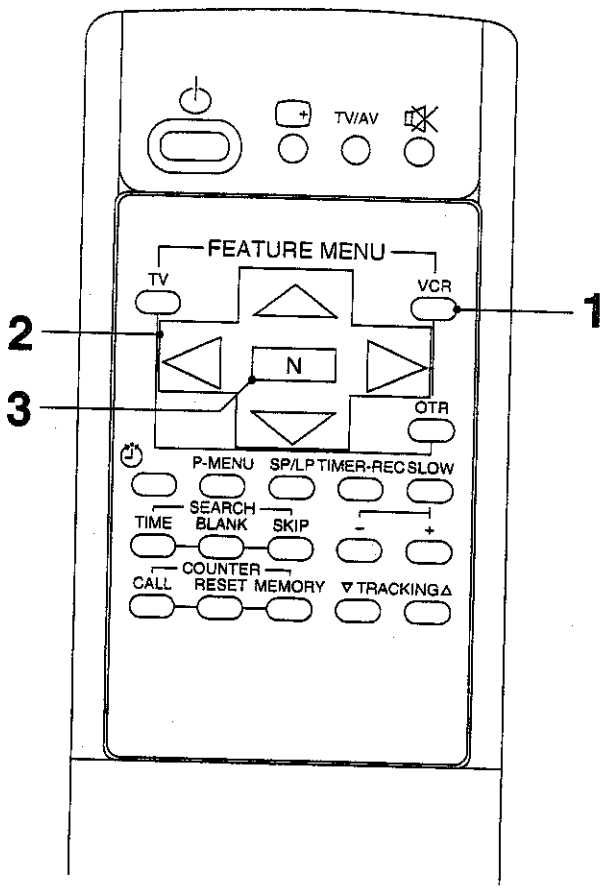
20

Push the TIMER-REC button and the programme reservation is executed. The TIMER-REC Indicator (Orange) lights up and the VCR is standing by ready for recording.

Note:
Switch off the power when you are not watching the TV or will be absent during recording.

Note:

- Adjustment of the programme memory can not be conducted during picture recording.
- Set the end time of any recording to be within 23 hours and 30 minutes from the start time.
- When the present clock time is changed after adjustment of the programme memory, the preset programmes are left as they were, or otherwise cancelled.
- When a tape with erasure prevention tab removed is set for timer recording, the TIMER-REC Indicator blinks and the tape is automatically ejected. Insert a tape with erasure prevention tab in place.
- When programme times overlap, the programme with the lower programme number is given priority.
- Programme Timer Recording can not be performed when the Karaoke Mode is ON.
  Turn the Karaoke Mode OFF.

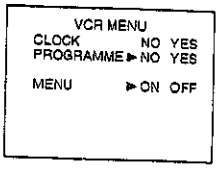


Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

Programme checking

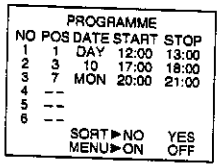
1 VCR

Push the "VCR FEATURE MENU" button.
Note:
When the timer is preset, the programme table appears immediately.



2 N

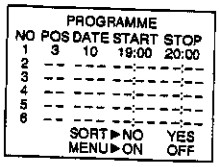
Select YES by using the cursor buttons " ◁ " and " ▷ " and the programme table appears.
Note:
The content of the applicable line blinks while that programme is being executed.



Programme cancellation

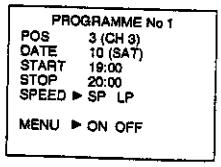
1 VCR

Push the "VCR FEATURE MENU" Button and select Programme YES by using the cursor buttons " ◁ " and " ▷ ". The programme table appears.
Note:
Cancel the timer first when a reserved programme is being executed (when the timer is preset).



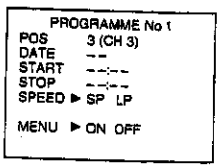
2 N

Select the programme to be cancelled by using the cursor buttons "△" and " ▽ " and execute cancellation by using the cursor buttons " ◁ " and " ▷ ".

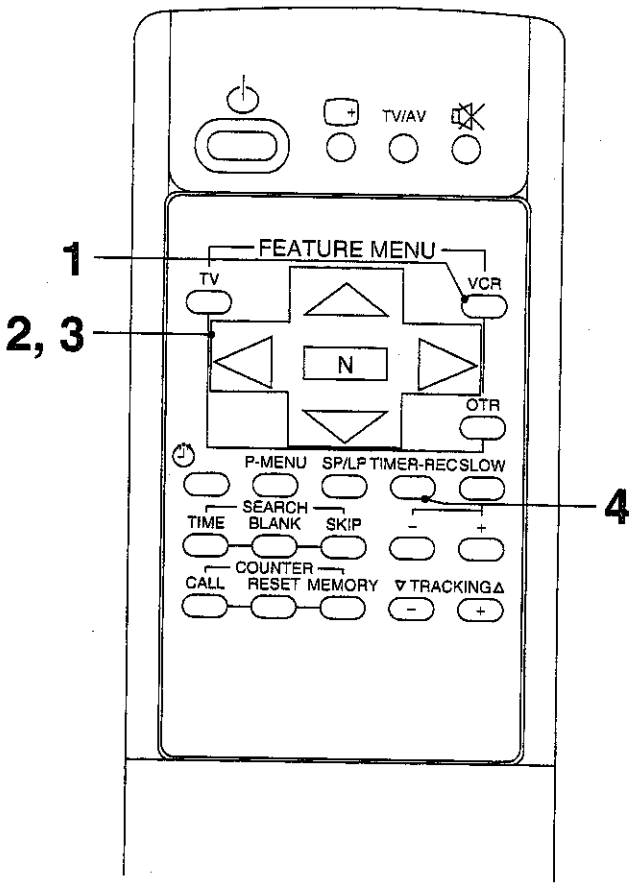


3 N

Push the "N" Button and cancel the contents of the programme.



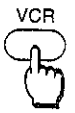
Note:
All the programmes 1-6 can not be cancelled collectively. Cancel each programme separately.



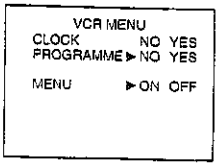
Note:
The illustration shows the buttons inside the Remote Control door. For the method for opening the door, refer to page 14.

Programme rearrangement

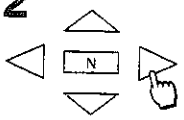
1



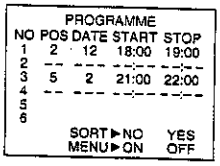
Push the "VCR" Button and select PROGRAMME.



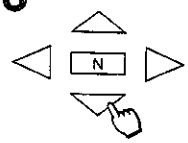
2



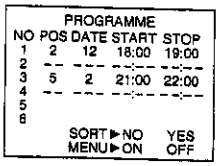
Select "YES" by using the cursor buttons "◁" and "▷" and the programme table appears.



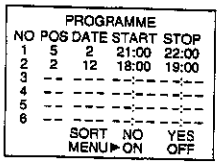
3



Set the cursor to "SORT" by pushing the cursor buttons "△" and "▽". Rearrangement can then be carried out by using the cursor buttons "◁" and "▷".



Note:
The order of priority for rearrangement is as follows:
① Recording date
② Start time of recording
For daily and weekly recordings, the first recording date is judged by comparison.



Cancellation of Timer Recording after recording or before execution of a programme reservation

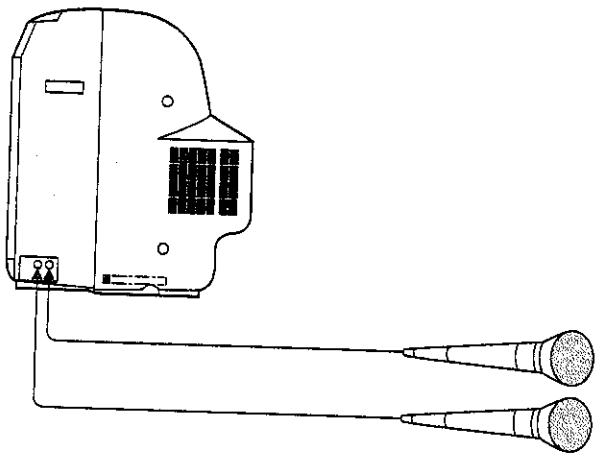
4

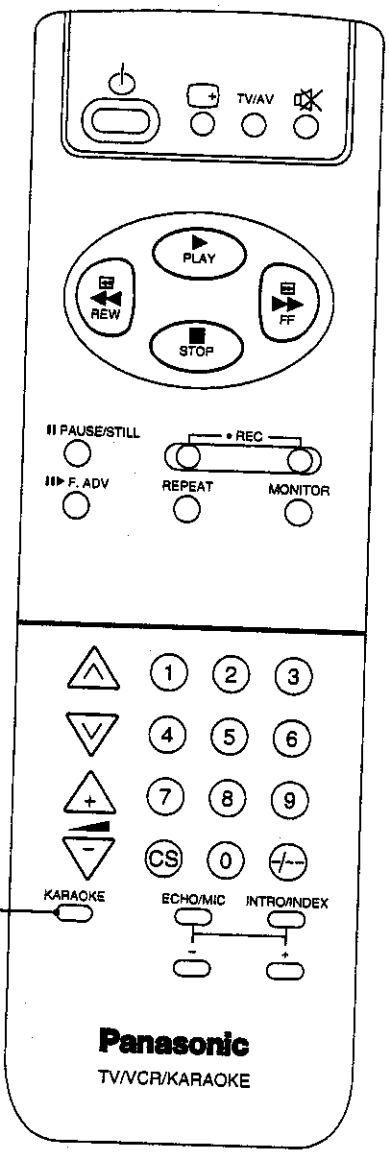
Push the "TIMER-REC" Button. The "TIMER-REC" indicator goes off and reservation via the timer is cancelled.

Note:
Unless reservation via the timer is cancelled, it is impossible to operate the VCR and to eject the tape.

Preparation

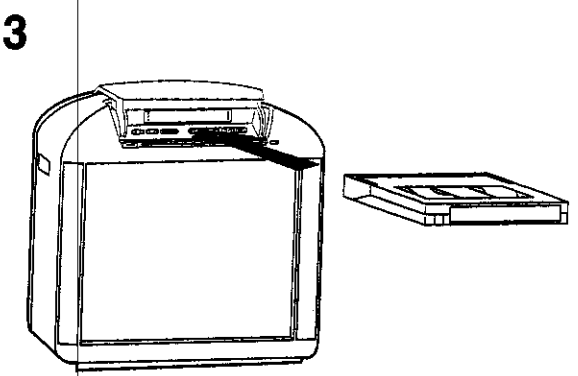
1





2

3

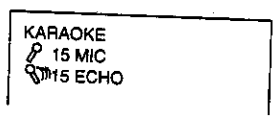


1

Connect a microphone to the microphone Jack on the TV set. (One or Two Microphones may be so connected)
Refer also to page 21 "Connecting Microphones".

2

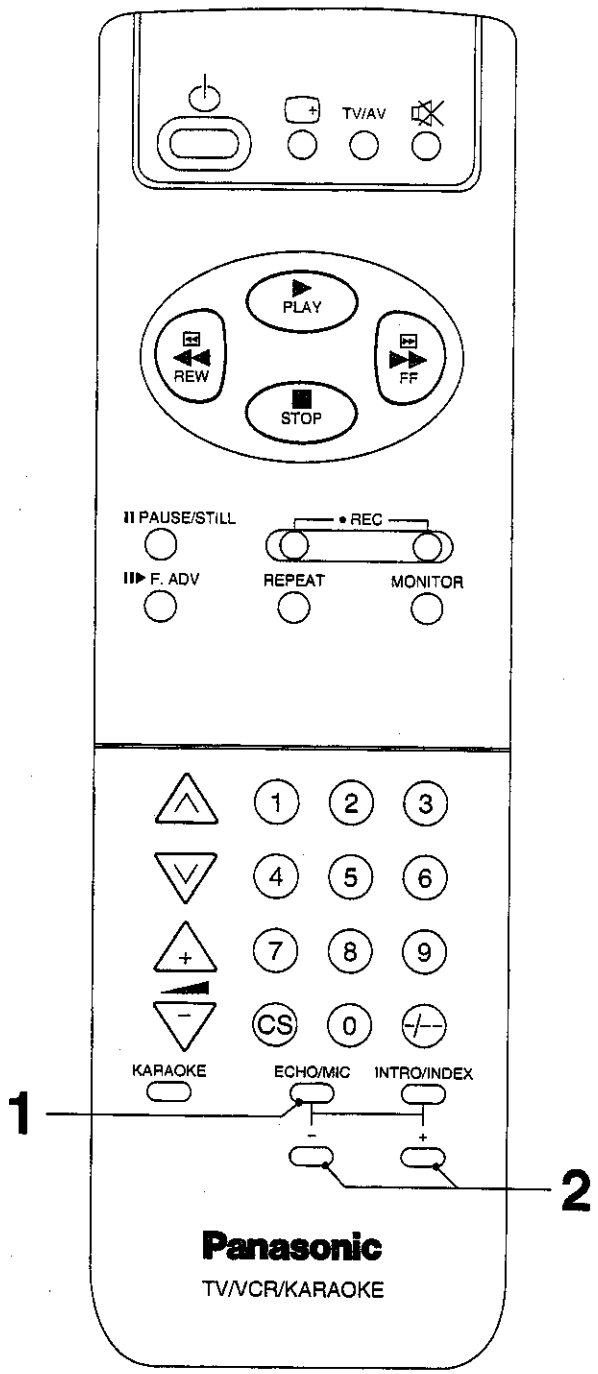
Push the "KARAOKE" Button to turn the KARAOKE Mode on.



3

Insert a KARAOKE video cassette tape.

- When a tape with removed erasure prevention tab is inserted, playback starts automatically.
- In the case of a cassette tape with intact erasure prevention tab, push the PLAY button.

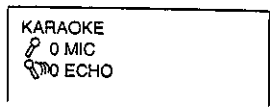


ECHO Level Adjustment

It is recommended that you adjust the volume of the backing band sound to a level which is a little lower than that of your voice. The mixing balance will become better, and sufficient echo effect will be obtained.

1 ECHO/MIC

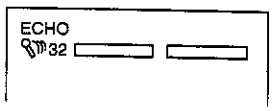
Push the "ECHO/ MIC" Button twice.



2 – +

By pushing the "+" or "–" Button you can increase or decrease the ECHO Level.

Setting range;
0~63

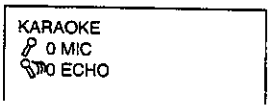


MIC Level Adjustment

Adjust the volume of the Microphone to a suitable level with the Microphone Level Control, while singing.

1 ECHO/MIC

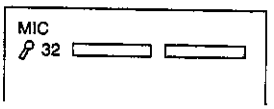
Push the "ECHO/ MIC" Button



2 – +

By pushing the "+" or "–" Button you can increase or decrease the MIC Level.

Setting range,
0~63

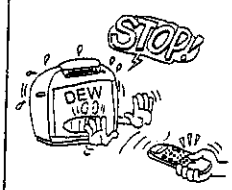
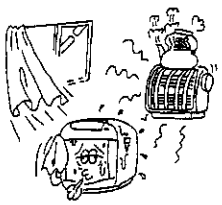
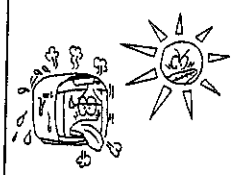
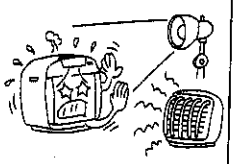
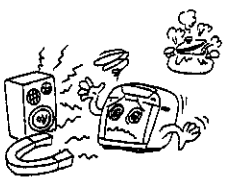
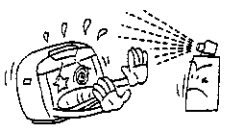


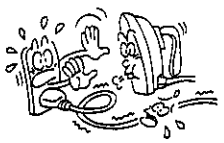
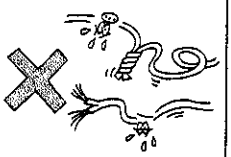
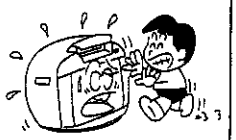
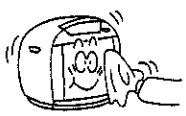
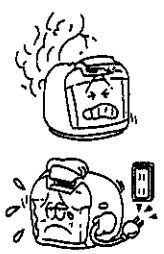
Note:

- If the volume is set too high, the sound from the speaker may become distorted.
- If acoustic feedback (howling) occurs, turn the microphone volume down, use the microphone farther away from the speakers, hold the microphone so that it is not pointed toward the speakers, or turn the volume of the TV set down.
  (If the sound is produced through a stereo amplifier, turn the volume of the stereo amplifier down.)

Helpful Hint

By pushing this button, the selected "KARAOKE Mode ON" will be changed to the Normal Mode. The Normal setting for MIC/ECHO Level: is "32", as shown on the on screen Display.

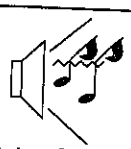
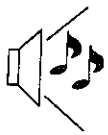
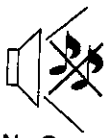
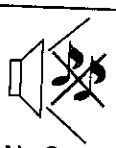
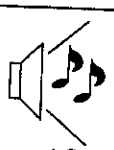
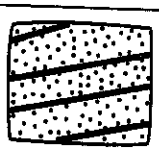
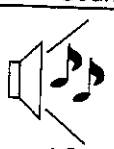
	When a dew condensation phenomenon occurs, indication of "dew condensation" appears and the cassette tape is ejected. Indication of "dew condensation" ceases soon. When you want to operate the VCR, push the "COUNTER CALL" button and wait for a while until the said indication ceases. While "dew condensation" is indicated, the VCR does not work even if you push any operation buttons, but you can watch the TV. Indication of "dew condensation" will cease within several hours at latest. Such time may differ according to circumstances. As generally dew condensation advances gradually, and indication of "dew condensation" may appear 10-15 minutes after the beginning of dew condensation.		Conditions which cause dew condensation are as follows. It may occur if the TV/VCR and the cassette tape were moved to another place where there are great changes of temperature and humidity. • A humid place where the air is thick with steam. • When the TV/VCR was suddenly moved from an air-conditioned room to a hot and humid place. • The room was heated quickly. When the rotary cylinder is stained with condensation droplets, the tape may adhere to the rotary cylinder. It may interfere with normal forwarding of the tape and the tape may be damaged.
	Do not put the TV/VCR set in a place where it is exposed to the direct rays of the sun for a long time.		Do not put the TV/VCR set in a place where it is exposed to a spotlight, heating appliance, smoke, steam etc.
	Do not put the TV/VCR set in a place which is dirty or damp or near a strongly magnetic object.		Do not block the ventilating holes.
	Always remove connection cable when moving the TV/VCR. When you carry the TV/VCR to a distant place, always wrap it in a blanket or something protective.		Do not put heavy objects on the TV/VCR.
	Do not give the TV/VCR a physical shock while carrying it.		Do not spray insecticide or volatile solvent upon the TV/VCR. Do not allow rubber and vinyl products to contact the TV/VCR for long periods. They may cause changes in quality and peeling of the paint.

	Always pull out the power plug by holding the plug itself. Do not pull the cord.		Do not open the cabinet. • To touch the inside is extremely dangerous.
	Do not bring a heating appliance close to the power cord.		Do not alter the power cord.
	Do not place heavy objects across the power cord.		Do not insert anything except a video cassette tape into the insertion slot. • Especially, take care that your child does not put his/her hand into it. He/she may get hurt.
	Wipe off any dirt on the cabinet and operation panel with a soft cloth. • When you use a chemical dustcloth, read the that is supplied with it manual carefully. • When the dirt does not come off, soak the cloth in a neutral detergent diluted with water and squeeze it dry and then wipe off the dirt. Then, wipe with a dry cloth.		Wipe dirt from the surface of the picture tube with a soft dry cloth.
	You may feel weak electricity when you touch the surface of the picture tube. Static electricity is responsible for it. However, it does not have a bad influence on a person.		Do not use this set if abnormal operation occurs. Ex: Smoke, odd sounds, or smells. Turn the power switch off and disconnect the AC plug, if you notice any unusual operation.
	Do not put any vessel containing water on or near the TV set.		

When you suspect the TV is out of order, check the following points before requesting Service.
Refer to either the shop where the pruchase was made or the nearest Authorised Service Centre if the malfunction cannot be corrected.

Symptoms	Checks
The power is not supplied.	Is the power plug disconnected?
	Is the main power switched ON?
The programme selected is not displayed clearly.	Is the aerial connected properly?
	Is the received signal weak?
Spots appear on the screen.	Is the reception being disrupted by car, train, high tension cable, neon light interference?
The picture has double or treble images.	Has the direction of the aerial been changed? It may change after a severe wind.
	Signal reflection from surrounding mountains or building may affect on the picture.
Interference pattern appears	Such symptoms may occur when the transmitting aerial for a radio station or a ham operator is near the TV.
The channel number does not disappear from the screen.	Is the RECALL Button pressed? → Push it again.
Inferior tint, light colour	Have the Colour and Tint been adjusted? (Check the adjustment values.)
The TV sometimes produces a cracking sound.	If the picture and sound are normal, it may probably be the sound from the cabinet which expands and contracts according to change of room temperature. This is not a malfunction.
The Remote Control does not work.	Is the transmitter oriented toward the receiving window on the TV?
	Do you operate the Remote Control within 7 m from the receiving window? (within 30° from right and left: within 5 m from the receiving window) (7 m range on axis, 5 m at 30°)
	Are there any obstacles between the Remote Control and the receiving window?
	Are the batteries dead? Are the batteries fitted properly?
	Is the receiving window being exposed to sunlight or strong fluorescent light?

Symptoms	Checks
The cassette tape is ejected immediately after insertion.	Is DEW CONDENSATION displayed on the screen? → Push the COUNTER CALL Button and wait for a while until the indication disappears.
	Is PICTURE RECORDING mode on? → When a tape with erasure prevention tab removed has been inserted, in ONE-TOUCH RECORDING, ONE-TOUCH TIMER RECORDING or PROGRAM TIMER RECORDING Modes, the tape is automatically ejected.
The TV does not operate although the power is switched on.	Various safety devices have been triggered. → Switch off the main power supply and switch on it once again, after waiting a few minutes.
PICTURE RECORDING Mode can not be switched on.	Has the record tab been removed from the tape? Is the TIMER RECORDING Mode on?
TIMER RECORDING Mode can not be switched on.	Is the present time set properly? Has the record tab been removed from the tape?
	Are the starting time and ending time set properly?
	Has the TIMER RECORDING Button been pushed?
	Is either ONE-TOUCH RECORDING or ONE-TOUCH TIMER RECORDING Mode set on?
	The KARAOKE Mode is ON, isn't it? → Turn the KARAOKE mode OFF.
No colour in picture reproduction, on tape playback.	Has tracking been adjusted? → Adjust the tracking.
Snowy picture on tape playback	Are the video heads dirty? → Request professional Service. Are the video heads worn out? → Replace them. Is the tape old?
Flickering	Is the tape old?
The digits of the tape counter do not change, during tape playback.	Is a non-recorded part of the tape being played back? → When a non-recorded part of the tape is played back, the screen becomes blue and the tape counter does not advance.
The picture sourced from on AV INPUT shakes or does not appear.	Such symptoms may occur when the input is set to AV INPUT and no signal is received at the video input terminals.
When a tape recorded by PAL system of 3 times the normal speed is playback after fast forwarding or rewinding, the colour tends to fade out.	This is caused by safety devices triggered by erroneous functioning.

Symptoms		Checks
Picture	**Sound**	
Snowy Picture	 Noisy Sound	Aerial Location, direction or Connections
Multiple Image	 Normal Sound	Aerial Location, direction or Connections
Interference	Noisy Sound	Electrical Appliances Cars/Motorcycles Fluorescent Lamps
Normal Picture	 No Sound	Volume (Check whether the Mute function has been activated on the Remote Control.)
No Picture	 No Sound	Not plugged into the AC outlet Not switched on. Contrast and Brightness/Volume setting (Check by pushing the Power Switch or Stand-by Button on the Remote Control.)
No Colour	 Normal Sound	Colour Control
 Scrambled	Normal or Weak Sound	Retune Channels
Coloured Patches	 Normal Sound	Magnetic interference from unshielded equipment Receiver moved while "ON" Turn the TV set off for 30 mins, using the "Power" Button on the TV set.
No Colour	Noisy Sound	Sound System (Refer to page 38) Colour System (Refer to page 39)

Model No.	TC-W21			
Power Source	AC 200~220 V 50 Hz (Hong Kong, China) AC 220~240 V 50 Hz (Australia, New Zealand, Southeast Asia)			
Power Consumption	110 W (AC 200~220 V) 115 W (AC 220~240 V)	Stand-by condition 7 W		
Receiving System	7 Systems		Function	
	1 2 3 4	PAL B, G PAL I PAL D NTSC M	Reception of broadcasts and Playback from Video Tape Recorders.	
	5 6 7	NTSC 3.58/5.5 MHz NTSC 3.58/6.0 MHz NTSC 3.58/6.5 MHz	Playback from Special Video Tape Recorders.	
Receiving Channels	VHF BAND		UHF BAND	
	2-12 PAL B 0-11 PAL B (AUST) 1-9 PAL B (NZ) 1-12 PAL D 1-12 NTSC M (Japan) 2-13 NTSC M (U.S.A.)		21-69 PAL G, I 28-69 PAL B (AUST) 13-57 PAL D 13-62 NTSC M (Japan) 14-69 NTSC M (U.S.A.)	
Tuning System	Frequency synthesizer			
Picture Tube	Overall Picture tube measured diagonally		54 cm	
	Viewable Picture measured diagonally		51 cm	
	CRT Deflection		90°	
Audio Output	4 W (max.)			
Microphone	Impedance 600 Ω			
Aerial Impedance	75 Ω Unbalanced coaxial			
Video/Audio Terminals	AV	Video In	1 Vp-p, 75 Ω	
		Audio In	Approx. 300 mV 50 KΩ	
	Monitor Out	Video Out	1 Vp-p, 75 Ω	
		Audio Out	Approx. 500 mV 1 KΩ	

Video Recording System	2 heads azimuth recording system	
Tape Speed	NTSC	PAL
	SP 3.33 cm/sec	SP 2.339 cm/sec
	LP 1.11 cm/sec	LP 1.169 cm/sec
Tape Format	VHS Tape	
Record/Playback Time	NTSC	PAL
	SP 120 min. with T-120	SP 240 min. with E-240
	LP 360 min. with T-120	LP 480 min. with E-240
FF/REW Time	Approx. 3.5 min. with E-180	
Television System	NTSC 525 lines, 60 fields	
	PAL 625 lines, 50 fields	
Modulation System	Luminance; FM azimuth recording Colour Signal; converted subcarrier phase shift recording	
Audio Track	1 track (mono only)	
Audio Characteristics	Frequency response	SP 100 Hz~8000 KHz (–10dB)
		LP 100 Hz~5000 KHz (–10dB)
	Wow and flutter	SP 0.25 %
		LP 0.35 %
Operating Temperature	5 °C~40 °C	
Operating Humidity	35 %~80 %	
Accessories Supplied	Aust, NZ, Southeast Asia	China, Hong Kong
	Remote Control R6 (AA) Battery x 2 Microphone plug adaptor (M6 to M3) x 2	Remote Control R6 (AA) Battery x 2 Microphone Microphone plug adaptor (M6 to M3)
Dimensions (W x D x H)	534 mm x 482 mm x 492 mm	
Weight (Mass)	28.0 Kg (Net)	

Note:
Design and Specifications are subject to change without notice.
Weight and Dimensions shown are approximate.

Customer's Record
The Serial Number of this product can be found on its rear cover. You should note this Serial Number in the space provided below and retain this book plus your purchase receipt as a permanent record of your purchase to aid in identification in the event of theft or loss, and for Warranty Service purposes.

Model Number TC-W21 Serial Number

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

Printed in Japan
S1292